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BY WILLIAM SEAMAN BAINBRIDGE, A.M., Sc.D., M.D.,

PROFESSOR OF SURGERY, NEW YORK POLYCLINIC MEDICAL SCHOOL AND HOSPITAL; ATTENDING SURGEON, NEW YORK SKIN AND CANCER HOSPITAL; ETC.

GENTLEMEN,—It may be said that the indifference with which Sir Arbuthnot Lane's earlier pronouncements concerning chronic intestinal stasis were received has been largely overcome. Scepticism may have been the impelling force in overcoming this inertia, but it is safe to say that attention thus directed to the subject has been maintained by genuine interest. However gained, it has continued in increasing measure, and stasis may to-day be rightly denominated one of the great questions before the medical world. For some years now medical societies and medical journals have been more or less concerned with dissertations on Lane's theories and his clinical findings. The "pros" and "cons" of the matter are being thoroughly threshed out in the mills of experience and controversy. Internists, gastro-enterologists, radiologists, pathologists, and surgeons are taking part in the discussion of this important and seemingly far-reaching question of chronic intestinal stasis and its treatment.

THE PRESENT ATTITUDE ON THE QUESTION.

One important part of the output of grist from the mill of controversy and discussion is the establishment of the *existence of those adventitious intra-abdominal structures* to which Lane has been calling attention since 1887 and to which he has applied the term "evolutionary bands," and of the condition which he has described as "chronic intestinal stasis." Around these two facts have developed some very creditable work by different investigators and quite an interesting and valuable literature. There are still controversial questions involved, but there is good reason to believe that we are on the right road and are making progress toward their solution.

Some observers are studying the subject with special reference to one particular phase, others to another; the correlation of the knowledge thus obtained must be fruitful of good results in the matter of reaching definite conclusions which, in time, will be pronounced the consensus of opinion. Some are interested in the etiology or pathogenesis of the various adventitious structures. Others, from the point of view of the radiologist, are adding their data with reference to the diagnosis of the conditions resulting from these "veils," "bands," "folds," and "membranes." Internists and gastro-enterologists, as a rule, direct their attention largely to the treatment of these conditions by non-surgical means. The surgeons reserve the right, as occasion seems to demand, to resort to operative procedures, such as the cutting and suturing of bands, short-circuiting, colectomy, or other operative procedure. Some have not joined the ranks of the optimists, but still register among the pessimists. They are busy discovering flaws in Lane's line of reasoning; in detecting the impossible in his pathology; in condemning him to the category of the hopeless hobbyist. They see in his propensity for exploring new fields the danger of riding his horse to death, as a distinguished pathologist has expressed it. They have conjured up nightmares in the form of "small minds and untrained," "immature surgeons of two continents," who, following these "phantasms of a disordered imagination," are apt to "inaugurate an era of short-circuiting, performing this or the yet graver colectomy for all sorts and conditions of disease in all sorts and conditions of men, women, and children, on the smallest possible pretext."

Lane himself, referring to the attitude of some of his confrères, says:—

> When I first began to draw the attention of the profession to the great part played in the life-history of the individual by a delay in the passage of material along the alimentary tract, and drew a parallel between the human digestive canal and a drainage system, my observations were treated as being the fantasies of a vivid imagination. Later, when the accuracy of these observations was being tested in the field of hard fact, the more progressive observers began to realise that my premises were not so fanciful as had at first been supposed. Now, the subject of chronic intestinal stasis, and its disastrous sequelæ, is occupying the attention of the profession more and more completely every year.

DEMONSTRATION OF THE BANDS AND KINKS.

I am glad to be able to count myself among the small number of those who, from the first, have received his views with open mind and have been content to follow Lane's footsteps as an investigator, not accepting unqualifiedly all his theories, but being open to conviction. Thus for eight years and more I have been following, at first hand, his work and his cases. I have had the privilege of examining many of his patients before operation, of watching Lane at the operating table verify his diagnoses, and of examining these same patients on successive annual visits to London, after operation. I have studied the subject of chronic intestinal stasis from many points of view, and am not oblivious of the fact that in the treatment of by far the greater group of his patients Lane does not consider surgical interference necessary. I have endeavoured to main the spirit of open-mindedness, believing that there is here a great field for investigation and a reasonable hope of doing lasting good to many by means of both non-surgical and surgical treatment.

It is important, it seems to me, to study the human digestive canal as a great drainage system, the human body, if you please, as a house, and the digestive system as the drainage plant of the house. It is important, too, to consider this system as a *whole*, remembering that defects in one or more parts are apt to derange the whole plant. It is well to study the matter by beginning in the cellar, so to speak—the rectum—as would a plumber in looking for defects in the plumbing system of a house, and to work up to the attic—the stomach; then to reverse the order and to work from above downward.

By following this method of study I have been able to find the adventitious structures in the abdomen, to which Lane has so persistently called attention and which he has so clearly described. I have also been able to demonstrate to my own satisfaction, and to the conviction of assistants and many who have witnessed the operations, the kinks in the intestine which these bands cause, and the

resulting dilatation of the involved portions of the drainage canal. The diagnosis thus established at operation has been confirmed, in a large proportion of cases, by the improved condition of the patient after surgical treatment.

So many observers have verified the existence of the bands, which have come, without his will, to be known as "Lane's bands," and the resulting kinks, which many are accustomed to designate as "Lane's kinks," that these particular matters are gradually emerging from the category of controversy and are now very generally accepted as facts.

POINTS TO BE CONSIDERED.

The etiology of the various "bands," "folds," "veils," and "membranes" is still a subject for discussion, and has given rise to an unfortunate terminology which has tended in a measure to obscure the more important issue of their existence and effects. The condition of stasis which results, however, from the kinking of the gut by these bands is, as I have said, fairly well established, while the immediate and remote results of this stasis are still a subject for discussion.

It is not my purpose on this occasion to discuss any of the theories which still furnish a camping ground for opposing advocates. Nor is it my intention at this time to dwell upon the classification of cases or upon the treatment of cases of the different classes. I wish merely to present a series of cases, selected from hospital and private practice, as illustrations of several points, accepting for the sake of argument, we will say, that Lane's major premises are correct. These points I shall consider categorically and briefly:—

1. The possibility of making the diagnosis of chronic intestinal stasis by clinical examination alone without the aid of X ray or fluoroscopic study.

2. The verification of the diagnosis by the discovery at operation of the bands and the kinks.

3. The discovery in certain instances of conditions which may be interpreted as corroborative evidence of the correctness of Lane's theory regarding the possible remote effects of chronic intestinal stasis.

DIAGNOSIS.

At the recent meeting of the American Roentgen Ray Society at Cleveland I presented a series of 12 cases, giving a comparison of the radiographic with the operative findings. I emphasised the great importance of the X ray and the fluoroscope, when properly employed and the plates intelligently interpreted, as aids to diagnosis, both as regards the existence of chronic intestinal stasis and the causative bands and kinks, and with reference to the possibility of the remote effects of this condition. The splendid work of Alfred C. Jordan, of London, and others in this particular phase of radiographic work is certainly monumental and should by no means be depreciated. I wish, however, to emphasise the possibility, as shown in the cases which I shall present, of making a positive diagnosis of chronic intestinal stasis by the symptoms and clinical examination, without the aid of the other diagnostic measures. If clinical examination leaves the surgeon in doubt, naturally other diagnostic measures should be employed. When skilfully employed, the X ray is of great assistance in the localisation of the various bands and kinks, and I always employ it when possible. If the surgeon is not fortunate enough to be able to avail himself of the services of an expert radiographer he must, perforce, rely upon his own diagnostic skill. It then becomes more imperative that he understand thoroughly the mechanics of the great drainage system of the body, and that he familiarise himself with the symptomatology of chronic intestinal stasis.

The symptoms of chronic intestinal stasis are those which result from mechanical changes in the drainage-tube. We must take for granted, for purposes of discussion, that Lane's theory with reference to these changes is correct. What, then, are the clinical symptoms in a typical case of chronic intestinal stasis? They may be enumerated roughly in the following order:—

1. Pain or discomfort, usually referred to the region of the duodenum and stomach, but also to portions of the large intestine.

2. Gastric discomfort, nausea, and occasional vomiting, resulting from obstruction to the outlet of the stomach in consequence of ulcer or cicatrisation of the pylorus or duodenum, or constricting bands about the duodenum in the neighbourhood of the pylorus. These symptoms may be classed under the ordinary category of "indigestion."

3. Various symptoms which may be catalogued under the term "auto-intoxication," which Lane has described as "flooding the liver with a quantity of toxic material picked up from the stomach, duodenum, and small intestine, in excess of what the liver, kidneys, and skin are able to deal with." These vary according to the susceptibility of the individual.

Under this head may be grouped a most important set of individual symptoms and physical signs, such as the blotchy appearance of the skin, which is cold and clammy, especially over the extremities; the cold perspiration, of an offensive odour; the loss of fat; the lumpy condition of the breast; thyroidismus in some cases; tenderness over the ileum; mental torpor; in fact, the entire symptomatology usually described under auto-intoxication. Headache, melancholia, inability to sleep, or sleep disturbed by unpleasant dreams also come under this general classification of symptoms.

4. Constipation or, as is sometimes the case, persistent diarrhœa. In Case 9 of the series herewith presented diarrhœa was persistent and distressing, and could not be controlled by any of the usual means.

Patients who present a sufficient number of the signs and symptoms briefly catalogued above to warrant a tentative diagnosis of chronic intestinal stasis should be safeguarded in every way. A Wassermann test should be given whenever there is a possibility of syphilis. When the clinical examination points definitely to stasis and a fair trial of non-operative means has failed to relieve, the abdomen should be opened. Opening the abdomen, however, either with or without X ray examination, is more or less in the nature of an exploratory operation, and may be considered the last step in the diagnosis of this condition.

VERIFICATION OF CLINICAL DIAGNOSIS BY OPERATION.

The cases which are presented herewith illustrate the possibility of making a purely clinical diagnosis. In each case, as I have stated, the diagnosis was clearly made without the aid of the radiologist. In some instances X ray examinations were made for the purpose of substantiating the clinical diagnosis. In other cases this was impossible. In each instance, however, there was evidence, as shown by the symptoms and clinical examination, of marked chronic intestinal stasis.

FIG. 3.

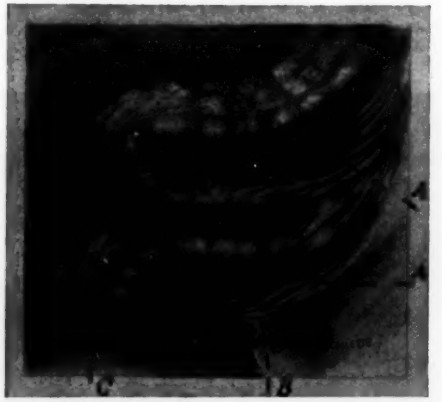
FIG. 2.

FIG. 1.

FIG. 1.

Case 1.—*A*, Strong band, causing kinking of the bowel above the pelvic brim. *B*, Rectum.

FIG. 2.



Case 2.—*A*, Bands causing kinking of pelvic colon, catching up and enveloping left ovary. *B*, Ovary. *C*, Fundus uteri.

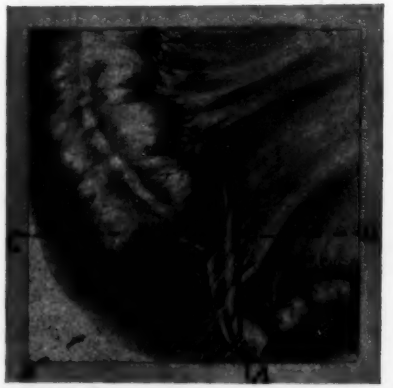
FIG. 3.

Case 2.—*A*, Ileo-pelvic band. *B*, Appendix adherent to under surface of mesentery and ileum. *C*, Distended and rotated caput coli. *D*, Bands.

FIG. 4.

Case 3.—*A*, Broad ileo-pelvic (Lane's) band. *B*, Pelvic brim. *C*, Ileum held up out of cul-de-sac.

FIG. 5.



Case 4.—*A*, Ileo-pelvic band. *B*, Attachment of appendix to under surface of mesentery and to ileum. *C*, Cæcum. *D*, Ileum greatly narrowed in calibre when large bowel is pulled up toward diaphragm, because of fixed point at *A*.

FIG. 6.

Case 5.—*A*, Omentum attached to ascending colon. *B*, Attachment of omentum to abdominal wall, across ascending colon, causing considerable constriction. *C*, Attachment of omentum to ovary and tube. *D*, Attachment of omentum to bladder and fundus uteri. *E*, Appendix angulated and adherent to under surface of mesentery.

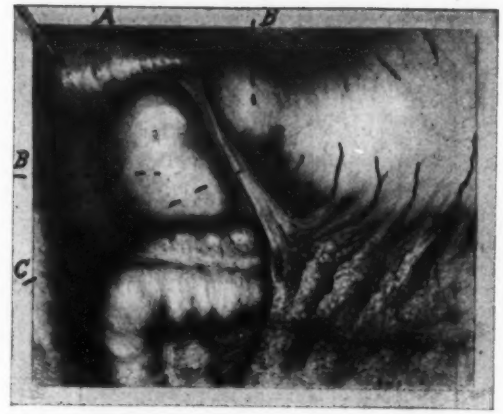
FIG. 7.

Case 6.—*A*, Appendix, forming a cavity, in which was situated an abscess. *B*, Inflammatory adhesions. *C*, Bands of fixation of cæcum.

FIG. 8.

Case 7.—*A*, Mobile cæcum, with band from great omentum over head of colon. *B*, Same band constricting terminal ileum. *C*, Thickened band from omentum over to ascending mesocolon. *D*, Greater curvature of stomach, which, when patient was in upright position, caused a pull on the head of colon.

FIG. 9.



Case 7.—*A*, Distended gall-bladder. *B*, Dilated duodenum. *C*, Constricting band.

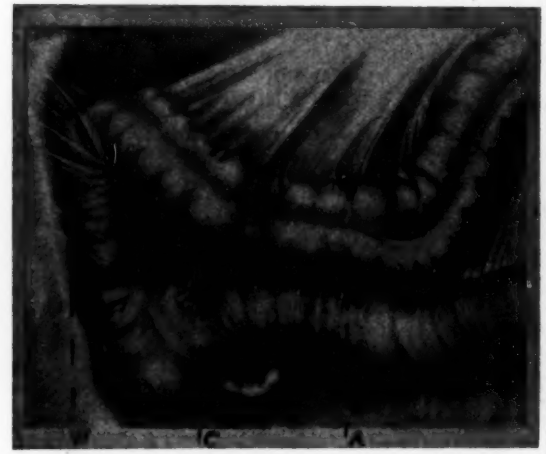
FIG. 10.

Case 8.—*A*, Attachment of great omentum to cæcum. *B*, Attachment of great omentum to pelvic wall.

FIG. 11.

Case 8.—*A*, Great omentum lifted up, adhesions cut and tied off. *B*, Raw surfaces on ascending colon covered over by suture. *C*, Ileo-pelvic (Lane's) band. *D*, Greatly distended ileum.

FIG. 12.



Case 9.—*A*, Prolapsed transverse colon. *B*, Pericolic membrane ("Jackson's membrane"). *C*, Patent ileo-cæcal valve.

In briefly detailing the cases I have purposely omitted reiterating the fact that the diagnosis was made of *chronic intestinal stasis*. Inasmuch as my purpose is merely to add to the corroborative evidence by the presentation of a selected series of cases, I shall refrain from giving the general history of the patient and the treatment employed.

It may not be amiss, however, to say a word concerning the method employed in the making of the pictures of the conditions found upon opening the abdomen. In the first place, I try to have a stenographer present in the operating room, to whom are dictated the findings. The medical illustrator makes a rough sketch of the conditions found just as they appear to him or her at the operation. It requires only a few minutes for the surgeon to demonstrate these to the artist, who is skilled in this kind of work. The findings are then checked up by the assistants, and sometimes by visiting surgeons. From this operating-room sketch the artist builds up the drawings, with the assistance of the stenographer's notes, the checkings of the assistants, and the findings of the surgeon. Each picture is therefore an accurate interpretation of conditions as actually found upon the operating table.

It is obviously difficult, however, to put into each picture every phase of the pathological condition. Therefore, for the purpose of clarity, without the sacrifice of accuracy, each picture emphasises some special point or points.

CASES.

CASE 1.—Female, single, aged 53. Referred by Dr. Grace Peckham Murray, New York City. Operation, Alston's Private Hospital, Jan. 28th, 1914.

Operative findings.—Slight constriction of pylorus; evidence of ulcer on postero-inferior aspect of pylorus, near sphincter. Duodenum greatly dilated; distinct duodeno-jejunal kink. Bands across pylorus, attached to great omentum and transverse colon below and to transverse fissure of liver above. Mobile cæcum, hanging down in pelvis. Fixed band at base of appendix, running under ileum to pelvis. Considerable dropping of transverse colon, hepatic flexure being almost at level of umbilicus, splenic flexure being easily visible, but fairly well supported. Sigmoid very redundant. Distinct external thickening of sigmoid mesentery, with bands anchoring it tightly in an exaggerated "last kink," as shown in Fig. 1.

CASE 2.—Female, aged 12. Referred by Dr. Eliza M. Mosher, Brooklyn. Operation, Alston's Private Hospital, June 26th, 1914. History of epilepsy.

Operative findings.—Cæcum prolapsed and rotated inward and downward around a pivotal axis represented by bands extending from the meso-appendix to the under surface of the ileum. Appendix somewhat congested and adherent to last few inches of under surface of ileum. Distinct angulation 1½ inches from ileo-cæcal valve. Valve not patulous. A band extended from base of gall-bladder across dilated duodenum to greater curvature of stomach and to right lateral portion of gastro-colic omentum, where it was about half an inch wide. Sigmoid colon very much elongated, with distinct crystallisation of the lines of stress over brim of pelvis. Left ovary and tube adherent to these bands. (Figs. 2 and 3.)

CASE 3.—Female, married, aged 41. Referred by Dr. Isabelle Thompson Smart, New York City. Operation, Alston's Private Hospital, May 30th, 1914. Early stasis.

Operative findings.—Beginning Lane's or ileo-pelvic band; adhesions of appendix underneath terminal ileum, as shown in Fig. 4. Right ovary cystic and fibrous.

CASE 4.—Male, aged 35. Referred by Dr. C. F. Sayles, Miami, Fla. Operation, Alston's Private Hospital, May 28th, 1914.

Operative findings.—Ileum tightly adherent to pelvic floor about four inches from ileo-cæcal valve. (Fig. 5.) Appendix caught in same band and adherent down along ileum. Adhesions from gall-bladder across duodenum and at sigmoid colon.

CASE 5.—Female, married, aged 34. Operation, New York Skin and Cancer Hospital, June 2nd, 1913.

Operative findings.—Great omentum firmly adherent to right ovary, tube, and broad ligament, and to apex of bladder, and fundus uteri, by bands, some avascular and some vascular. (Fig. 6.) Laterally, omentum adherent to anterior longitudinal band of ascending colon as far down as ileo-cæcal valve. Adhesions, binding omentum to ascending colon, transverse colon, and lateral abdominal wall. Transverse and ascending colons almost amalgamated, making an acute angle at hepatic flexure. Appendix turned under and attached to under surface of mesentery, excepting at its tip. No ileo-pelvic bands.

Stomach dilated, pulled down and somewhat fish-hooked when traction was made on omentum. Gall-bladder normal. No duodeno-jejunal kink.

CASE 6.—Female, single, aged 27. Referred by Dr. Nan Gilbert Seymour. Operation, Salvation Army Rescue Home, March 14th, 1914.

Operative findings.—Appendix curved up behind cæcum and terminal ileum; greatly enlarged in calibre. An opening had formed between appendix and terminal ileum, this end of appendix being smaller than elsewhere. The appendix constituted an abscess with two openings, one draining into the cæcum, the other into the terminal ileum. This hanging up of the appendix was the cause of marked chronic intestinal stasis. The adhesions shown in Fig. 7 had been separated partially before the base of the appendix and terminal ileum were visible.

CASE 7.—Female, single, aged 18. Referred by Dr. Isaac Arthur Stoloff, New York City. Operation, New York Polyclinic Hospital, April 18th, 1913.

Operative findings.—Stomach somewhat congested, pylorus patulous. Duodenum slightly congested and dilated. Liver normal. Right kidney, which had been stitched too snugly in place in a previous operation by another surgeon, rubbed against last two ribs at junction of the cartilage with the bone.

A strong band of adhesions extended from greater curvature of stomach to the point from which the appendix had been removed at a previous operation, crossing the ascending colon and making an indentation in colon. Another band extended from the great omentum farther to left and passed to ascending colon, being fastened to its mesial aspect. Caput coli and cæcum entirely mobile almost to hepatic flexure, not normally supported, and with a rather thickened mesentery. The adhesions formed a fixed point, around which the intestine was enlarged. Marked duodeno-jejunal kink. Redundant sigmoid. (Fig. 8.)

At a second operation, April 23rd, 1914, a strong band of adhesions was found passing from the base of the gall-bladder across the dilated duodenum and transverse colon. (Fig. 9.)

CASE 8.—Female, single. Referred by Dr. Hermann Eichhorn, New York City. Operation, New York Polyclinic Hospital, Dec. 19th, 1913.

Operative findings.—Great omentum adherent to lateral margin of ascending colon and to right broad ligament. Omentum dissected away, revealed a band attaching terminal ileum to right broad ligament and to brim of pelvis, causing angulation in the gut, which was greatly distended proximally and collapsed distally to the point of angulation. (Figs. 10 and 11.)

CASE 9.—Female, married, aged 44. Referred by Dr. E. H. James, Westfield, Mass. Operation, Alston's Private Hospital, March 29th, 1913.

Operative findings.—Mobile cæcum, with distinct bands from cæcum to abdominal wall—pericolic membrane ("Jackson's membrane"). Marked prolapse of transverse colon, causing an acute angle of obstruction at the point where the upper margin of "Jackson's membrane" was situated, as shown in Fig. 12. Appendix distended and containing two enteroliths. Ileum showed no ileo-pelvic bands, but was distended to the size of the ascending colon. Ileo-cæcal valve patulous. When tension on "Jackson's membrane" was relieved by lifting up the transverse colon, this part of the canal became very much distended. Some

adhesions at splenic flexure of colon, causing angulation between descending and transverse colon. Stomach, gall-bladder, and liver normal.

CASE 10.—Female, married, aged 49. Operation, New York Skin and Cancer Hospital, April 30th, 1914.

Operative findings.—Great omentum broadly attached to upper surface of liver just to right of gall-bladder and extending backward over an area of 2 inches by ¾ inch in extent; attached for a considerable distance to the parietal peritoneum on the right side in the vicinity of the attachment to the liver. When these attachments were severed an extensive scar on the upper surface of the liver was exposed. (Fig. 13.) Firm bands in cæcal region, extending from cæcum, ¾ inch from base of appendix to parietal peritoneum of pelvic brim. Another band, like a broad thickening of mesentery of the ileum, extending from a point about an inch from the ileo-cæcal valve to the pelvic brim. Appendix lay between these two bands, pointing to the left and slightly downward.

FIG. 13.

Case 10.—*A*, Thickened edge of omentum, adherent to abdominal wall, retracted to show scar on liver (*C*), where irritation by this band caused changes. *B*, Retractor holding back omentum to show scar on liver. *C*, Scar on liver.

CASE 11.—Female, married, aged 60. Referred by Dr. Barnum, of Ossining, N.Y. Operation, Ossining Hospital, Ossining, December, 1913.

Operative findings.—Malignant stricture of transverse colon. Band of thickened omentum from greater curvature of stomach to sigmoid, directly over site of cancer. Ileum dilated; ileo-cæcal valve patent. (Fig. 14.) Kinked pelvic colon.

FIG. 14.

Case 11.—*A*, Malignant stricture of transverse colon. *B*, Band of thickened omentum from greater curvature to sigmoid. *C*, Dilated ileum.

CASE 12.—Female, married, aged 42. Referred by Dr. Alice Bugbee, New York City. Operation, Bethesda Hospital, White Plains, N.Y., June 8th, 1913.

Operative findings.—Distinct ileo-pelvic bands; ileum dilated. Gall-stones, beginning cancer of liver in neighbourhood of where gall-stones pressed upon liver. (Fig. 15.)

REMOTE EFFECTS OF CHRONIC INTESTINAL STASIS.

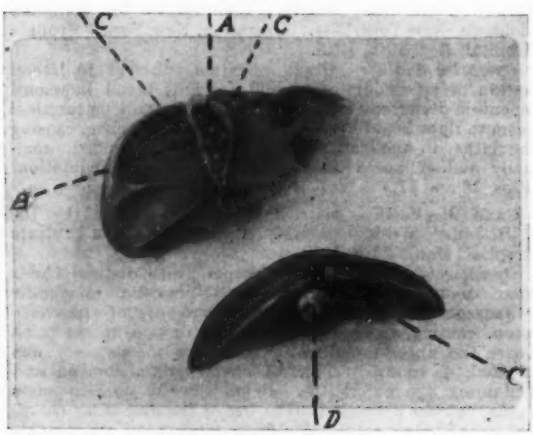
In addition to the usual symptoms as observed in a fairly typical case, Lane has called attention to a series of symptoms and diseases which he believes to be the outcome of chronic intestinal stasis, and which have been called the end-results. He has enumerated a rather comprehensive list of diseases which he believes to be traceable to chronic intestinal stasis or to the lowered resistance which results therefrom, among which may be mentioned rheumatoid arthritis, tuberculosis, goitre, and cancer. It is to the last-named disease that I wish to direct especial attention in this connexion.

I am not prepared to say at the present time how far, in my opinion, chronic intestinal stasis affects the development of cancer. The whole problem of cancer is so involved that we can to-day merely hypothesise concerning its etiology. The inter-relationship, however, of ulcers of the gastro-intestinal tract and cancer of this region, of chronic irritation, as shown in Case 12, and cancer, and of these conditions with chronic intestinal stasis, furnishes food for serious consideration. The last three cases of the series presented seem to me to be significant in the light of some of the possible end-results of stasis.

In this connexion I may conclude with a recent statement by Lane:—

"If the views I hold on the subject are even approximately correct, no bigger question has ever held the attention of the medical profession. It has to do with the groundwork of disease and deals with primary causes, a matter of the greatest moment to us in the explanation of the factors that produce changes in our several tissues, which changes we call diseases, and in the knowledge of the manner in which we can either obviate their development or alleviate or remove them if they have already developed."

FIG. 15.



Case 12.—*A*, Thickened gall-bladder. *B*, Gall stones. *C*, Beginning cancer of liver. *D*, Fundus of gall-bladder before being opened.

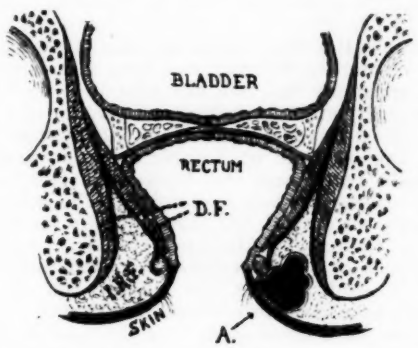
THE PREVENTION OF FISTULA IN ANO.

BY P. LOCKHART-MUMMERY, F.R.C.S. ENG.,

SENIOR SURGEON TO ST. MARK'S HOSPITAL FOR CANCER, FISTULA, AND OTHER DISEASES OF THE RECTUM, AND TO THE QUEEN'S HOSPITAL FOR CHILDREN; HONORARY SURGEON TO KING EDWARD VII.'S HOSPITAL FOR OFFICERS, AND SPECIAL SURGEON TO THE FULHAM AND HOMERTON MILITARY HOSPITALS.

IT is not, I think, generally realised that fistula in ano is, in the great majority of cases, an entirely preventable condition, provided that the abscess which nearly always precedes it is treated correctly in the first instance. It is true that in a few cases a fistula forms as the direct result of a fissure, without any real abscess formation, and this may sometimes be observed to take place. Under such circumstances the fissure is always one that has been present for some considerable time, and the ulcerative process has burrowed through the mucous membrane and exposed the submucous tissue; and in this latter layer the inflammation has spread till it has reached the skin and a complete fistula resulted. Often the original fissure has healed up by the time the case is seen, and only the scar is left as evidence of the cause of the subsequent fistula.

The more usual life-history of a fistula, however, is as follows. As the result of straining, or of the passage of some hard substance, a small tear or wound is produced in the mucous membrane of the anus at the point of greatest resistance—namely, the "white line," or upper level of the external sphincter. This small wound becomes infected with pathogenic micro-organisms, which are always in the vicinity, and the submucous layer of the



I.R.F., Ischio-rectal fossa. D.F., Deep fascia. A, Abscess spreading in fossa without causing swelling on skin. Note that the deep fascia does not in this situation compel the abscess to extend towards the skin until the whole ischio-rectal fossa is filled.

bowel wall is infected. This is the beginning of the formation of an abscess in the perianal tissues. The abscess readily spreads in the loose cellular tissue which is particularly abundant in this area, and since in this situation there is no deep fascia to limit its extension, and the subcutaneous fat is here directly continuous with the fat in the ischio-rectal fossæ, an abscess of considerable dimensions is rapidly formed. (See diagram). After a time the abscess bursts either into the bowel or through the skin, or both. The contents of the abscess being expelled, healing rapidly occurs in the main abscess, but the communication between the skin and the bowel, in the great majority of cases, persists as a fistula.

Mr. Ivor Back, in an article entitled "The Correct Life-history of Fistula in Ano,"[1] puts forward the theory that fistulæ are due to the tearing down of the anal papillæ, which are frequently to be seen between the valves of Morgagni at the upper level of the external sphincter. In spite of the title of Mr. Back's article, I am afraid his contention will not bear investigation. These papillæ, in my experience, do *not* tear down, and there is no earthly reason why they should. I have never seen anything to suggest that one of these papillæ has been torn away from its connexions, nor do I believe has Mr. Back. The only change, in my experience, that these papillæ ever undergo is occasionally to become hypertrophied and form small polyps, but this is quite a different thing from causing a fistula.

Fistula nearly always results from an abscess in the neighbourhood of the anus, and if this abscess is properly treated when it first makes its appearance it will generally heal without the formation of a fistula. Unfortunately, what usually happens is that the abscess is allowed to reach a considerable size before it is opened, and that it either bursts its way into the bowel at the upper level of the external sphincter, or that the tissues between it and the mucous membrane are so thinned as to render the subsequent formation of a fistula inevitable. I think everyone in these days will agree that the only treatment for an abscess in any position is to open it immediately and drain it. In practice, however, abscesses in the neighbourhood of the anus are seldom treated upon these lines. There are several reasons for this. The most important is the fact that an abscess in the cellular tissue around the anus does not, in the early stages, cause the ordinary signs associated with abscesses in other parts. The abscess generally commences either immediately below the mucous membrane or immediately beneath the skin, but as there is no deep fascia to limit it, it does not cause external swelling until it has reached a considerable size. The skin around the anus is thick and tough, so that the abscess tends to spread in the loose cellular tissue rather than towards the skin. The ordinary signs of abscess, such as redness, swelling, and heat, will not be obvious until the abscess is comparatively large. The only early signs of abscess in this situation are pain and local tenderness, often accompanied by a certain amount of malaise and a heightened temperature. This is the stage at which the abscess should be opened, and at which, if it is opened, a subsequent fistula can be prevented. At this stage in the formation of the abscess no swelling will be obvious, and there will be little if any redness of the overlying skin. If, however, when these symptoms are complained of a finger be passed gently into the anus and the parts carefully palpated between the finger and thumb, induration will be felt, accompanied by marked tenderness on pressure. These signs are quite sufficient to warrant an incision, and the proper treatment is to administer an anæsthetic without delay, and under proper aseptic precautions to introduce a knife through the skin some little distance away from the edge of the anus, and to incise the indurated area.

It often happens that an incision at this stage will show very little more than a slight discharge of sero-pus, but this does not mean that the

[1] Practitioner, July, 1915.

incision was unnecessary. A small drainage-tube should be inserted and stitched to the edge of the skin. The drainage-tube should not be long and should not go to the bottom of the abscess, but should merely be sufficient to keep the skin edges apart and allow the free evacuation of the discharge from the area of inflammation. The patient should subsequently be treated by frequent fomentations and hot baths two or three times a day, the tube being removed in about 48 hours, provided that the discharge has ceased. If such treatment is carried out promptly and thoroughly the abscess will almost certainly subside, like any other abscess, and without the subsequent formation of a fistula. The common mistake that is made in such cases is to temporise for a few days and to treat the case with fomentations in the hope that the abscess will subside or will become sufficiently obvious to be easily opened. The fact that this treatment gives considerable relief to the patient apparently justifies its adoption. What occurs is that in the course of a few days the abscess begins to point or bursts; there is complete cessation of pain and everybody is satisfied that the correct treatment has been adopted. The result of such treatment, however, will be almost inevitably the formation of a fistula in ano, and a subsequent operation for its relief. No harm can come from making an incision in the tissues at an early stage, even supposing that a mistake is made and no abscess is really present; the wound will rapidly heal up and cause no trouble. This is a far less serious mistake than to leave the abscess to reach a stage at which the subsequent fistula is inevitable.

At St. Mark's Hospital small abscesses are always opened directly the case is seen. Often very little discharge is found, but I am convinced that a very large number of cases are saved from a subsequent fistula by this treatment; and if all cases of acute inflammation in the neighbourhood of the anus were promptly treated by incision fistula in ano would become quite a rare condition instead of being, as it is at present, an exceedingly common one.

The method of suturing a drainage-tube into the incision in the skin is very much better than the more common practice of putting a plug of gauze into the incision. What is wanted is not to plug up the opening but to keep it patent. Gauze rapidly ceases to act as a drain, and discharge accumulates in the inflamed area.

It is to be hoped the time will come when abscesses in the neighbourhood of the anus will be incised as soon as they are suspected. At present the history of a case of fistula is always the same—namely, pain and tenderness in this region coming on suddenly; fomentations administered by the doctor for some days, with consequent relief from pain; then the opening or bursting of a large abscess, which fails to heal completely and becomes a fistula.

Hyde Park-place, W.

ST. MARY'S HOSPITAL MEDICAL SCHOOL.—As the result of the recent examination for entrance scholarships the following awards have been made: University Scholarship (50 guineas) (open), H. T. Prys Jones, University College, Cardiff. Open Scholarships in Natural Science: A. S. Wright, Latymer Upper Schools (£100); R. M. H. Newbery, Bristol Grammar School (£30). Frederic John Palmer Scholarship (£25), B. W. Roffey, Epsom College. The Epsom College Scholarship of 50 guineas was awarded, on the nomination of the headmaster, to T. S. North, Epsom College.

THE DURATION OF TREATMENT IN 1500 CASES.

BY JAMES RAE, M.A., M.D. ABERD.,
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AIDS to forecasting the chance of a fatal result in any particular disease are not hard to find, but to say how long a period must elapse before a patient will regain the condition of health which was his prior to the illness, is a problem which is too often left to conjecture, for our knowledge of the duration of prudent convalescence is scanty in the extreme. The investigation detailed in the tables which follow was undertaken with the object of supplying some data bearing on this matter, and was facilitated by the practice at the Connaught Hospital.

To this hospital are attached 13 auxiliary hospitals whither patients are transferred as soon as it is safe to do so after their admission. In those hospitals treatment is pursued until such a time as it is considered no longer necessary, whereupon the patients are returned to the Connaught Hospital for disposal. They are seen by a medical officer before they leave the auxiliary hospital; again on arrival at the Connaught Hospital, when they are registered either for re-entry to a ward or for discharge to their unit; and a third time on the day upon which they actually leave, when they are recorded as being discharged. These three examinations supply a check which is as adequate as possible, but the only truly safe guide would be a sensible patient's own feeling that he had regained his health.

The 1556 cases dealt with in this study are less than 15 per cent. of the patients admitted to the Connaught Hospital during a period of six months. They do not include any who died after return to the Connaught Hospital, any who were discharged as medically unfit for military service, or any about whose diagnosis there was doubt. They were taken from the register of transfers to the auxiliary hospitals (with only the limitations just stated) and the period of their stay noted. The admission registers were then searched and the days spent in the Connaught Hospital similarly recorded. The totals of these periods, the total number of cases of each disease, the longest and shortest periods were ascertained and finally the various averages were calculated. As the sole object of the investigation was to establish the period of convalescence, the personal factor was reduced to the minimum.

In expressing the results the term "convalescent days" is applied to the stay in the auxiliary hospital. It is desirable to state explicitly that it is used for convenience only, as various other terms propounded were unsatisfactory or clumsy. The auxiliary hospitals are neither established, managed, nor regarded as convalescent homes. They are sections or outlying wards of the Connaught Hospital, used to relieve pressure, and to give surroundings quieter than can be procured in a large hospital with constant admissions.

These figures cannot be applied to ordinary civilian practice without many reservations. They refer to males only, and to males of a picked class, who are exposed to severe changes in weather and to great physical strain in the attempt to inure them to those variations. Furthermore, the patients are under the care of a medical and surgical staff which

TABLE A.
General Surgical Cases.

Disease.	No. of cases.	Days under treatment.				Hospital days.				Convalescent days.			
		Total.	Highest.	Lowest.	Average.	Total.	Highest.	Lowest.	Average.	Total.	Highest.	Lowest.	Average.
Dislocations:													
Shoulder	5	113	42	13	22·6	34	13	4	6·8	79	37	6	15·8
Elbow	3	92	50	13	30·6	33	15	6	11·0	59	35	7	19·6
Thumb	1	24	—	—	24·0	4	—	—	4·0	20	—	—	20·0
Hip	1	44	—	—	44·0	20	—	—	20·0	24	—	—	24·0
Knee	1	50	—	—	50·0	4	—	—	4·0	46	—	—	46·0
Ankle	1	83	—	—	83·0	16	—	—	16·0	67	—	—	67·0
Rib	1	60	—	—	60·0	6	—	—	6·0	54	—	—	54·0
Sprains:													
Ankle	28	968	86	10	34·5	224	20	1	8·0	744	81	7	26·5
Knee	5	261	67	26	52·2	116	52	10	23·2	145	49	12	29·0
Elbow	2	41	26	15	20·5	9	5	4	4·5	32	21	11	16·0
Back	1	29	—	—	29·0	15	—	—	15·0	14	—	—	14·0
Synovitis	69	3882	125	12	56·2	897	85	1	13·0	2985	110	1	43·2
Displaced semilunar cartilage	10	538	101	20	53·8	168	37	4	16·8	370	64	15	37·0
Hernia	55	2435	83	15	44·2	1007	51	7	18·2	1428	71	7	25·9
Otitis media	13	595	75	16	45·7	211	40	2	16·2	384	45	9	29·5
Mastoiditis	6	309	65	33	51·5	106	26	4	17·6	203	61	17	33·8
Fractures:													
Skull	4	207	72	34	51·7	81	27	14	20·2	126	45	20	31·5
Malar	1	44	—	—	44·0	15	—	—	15·0	29	—	—	29·0
Jaw	2	103	54	49	51·5	44	27	17	22·0	59	32	27	29·5
Ribs	6	272	85	25	45·3	41	10	4	6·8	231	75	17	38·5
Clavicle	5	178	45	23	35·6	76	31	3	15·2	102	35	12	20·4
Humerus	5	216	53	28	43·2	78	32	4	15·6	138	36	19	27·6
Olecranon	4	198	66	36	49·5	86	30	13	21·5	112	50	12	28·0
Ulna	4	199	61	40	49·7	72	24	11	18·0	127	43	21	31·7
Radius	9	447	91	25	49·6	65	23	1	7·2	382	82	8	42·4
Radius and ulna	1	31	—	—	31·0	6	—	—	6·0	25	—	—	25·0
Pelvis	1	129	—	—	129·0	81	—	—	81·0	48	—	—	48·0
Patella	4	189	67	13	47·2	81	30	6	20·2	108	40	7	27·0
Tibia	20	1260	144	21	63·0	615	96	3	30·7	645	85	8	32·2
Fibula	14	603	86	15	43·0	224	53	4	16·0	379	75	6	27·0
Fibula and tibia	12	666	87	38	55·5	306	64	4	25·5	360	76	8	30·0
Astragalus	1	40	—	—	40·0	7	—	—	7·0	33	—	—	33·0
First metatarsal	1	51	—	—	51·0	6	—	—	6·0	45	—	—	45·0
Contusions and lacerated wounds	87	2698	126	10	31·0	871	56	2	10·0	1827	87	5	21·0
Burns	6	158	61	7	26·3	78	44	3	13·0	80	24	2	13·3
Periostitis	8	344	103	17	43·0	97	23	5	12·1	247	92	5	30·8
Hæmorrhoids	21	714	75	12	34·0	283	28	2	13·4	431	56	4	20·5
Varicocele	9	453	88	28	50·3	161	27	12	17·8	292	65	13	32·4
Varicose veins	27	1134	79	18	42·0	418	28	5	15·4	716	63	4	26·5
Ulcers:													
Leg	7	294	79	15	42·0	86	37	3	12·2	208	59	6	29·7
Rodent	2	75	44	31	37·5	35	24	11	17·5	40	20	20	20·0
Corneal	2	60	34	26	30·0	40	23	17	20·0	20	11	9	10·0
Whitlow	9	396	102	17	44·0	128	35	1	14·2	268	67	14	29·7
Infection of connective tissue	101	3450	86	10	34·1	1019	36	1	10·0	2431	69	1	24·0
Appendicitis	48	2642	139	17	55·0	1061	52	4	22·1	1581	87	4	32·9
Concussion	10	371	58	18	37·1	118	23	4	11·8	253	45	6	25·3
Lipoma	3	82	37	19	27·3	23	9	5	7·6	59	28	14	19·6
Osteoma (of femur)	1	43	—	—	43·0	18	—	—	18·0	25	—	—	25·0
Hammer toe	5	287	106	18	57·4	104	43	9	20·8	183	63	9	36·6
Urethral stricture	2	98	61	37	49·0	55	36	19	27·5	43	25	18	21·5
Malignant pustule	1	47	—	—	47·0	13	—	—	13·0	34	—	—	34·0
Keratitis	1	33	—	—	33·0	16	—	—	16·0	17	—	—	17·0
Torticollis	1	30	—	—	30·0	3	—	—	3·0	27	—	—	27·0
Cryptorchid	1	39	—	—	39·0	14	—	—	14·0	25	—	—	25·0
Cystitis	1	25	—	—	25·0	7	—	—	7·0	18	—	—	18·0
Hydrocele	1	51	—	—	51·0	13	—	—	13·0	38	—	—	38·0
Fistula in ano	1	41	—	—	41·0	22	—	—	22·0	19	—	—	19·0
Abscess	38	1343	83	8	35·3	475	46	2	12·5	868	54	4	22·8

TABLE B.

Expeditionary Force—Surgical Cases.

Disease.	No. of cases.	Days under treatment.				Hospital days.				Convalescent days.			
		Total.	Highest.	Lowest.	Average.	Total.	Highest.	Lowest.	Average.	Total.	Highest.	Lowest.	Average.
Fractures:													
Clavicle	2	64	37	27	32·0	14	10	4	7·0	50	33	17	25·0
Ribs	1	43	—	—	43·0	10	—	—	10·0	33	—	—	33·0
Humerus	1	56	—	—	56·0	44	—	—	44·0	14	—	—	14·0
Radius	1	42	—	—	42·0	13	—	—	13·0	29	—	—	29·0
Femur	2	410	291	119	205·0	290	199	91	145·0	120	92	28	60·0
Tibia	1	58	—	—	58·0	30	—	—	30·0	28	—	—	28·0
Fibula	1	110	—	—	110·0	51	—	—	51·0	59	—	—	59·0
Fibula and tibia	1	89	—	—	89·0	44	—	—	44·0	45	—	—	45·0
Skull	2	24	13	11	12·0	9	6	3	4·5	15	10	5	7·5
Hernia	2	89	58	31	44·5	33	17	16	16·5	56	41	15	28·0
Synovitis	3	97	34	31	32·3	11	4	3	3·6	86	31	27	28·6
Sprain of ankle	2	41	25	16	20·5	7	4	3	3·5	34	21	13	17·0
Infection of connective tissue	3	92	37	25	30·6	17	11	3	5·6	75	27	22	25·0
Hæmorrhoids	1	47	—	—	47·0	16	—	—	16·0	31	—	—	31·0
Scald of leg	1	20	—	—	20·0	10	—	—	10·0	10	—	—	10·0
Perinephric abscess	1	88	—	—	88·0	49	—	—	49·0	39	—	—	39·0

TABLE C.

Expeditionary Force—Wounds.

(All Gunshot Wounds except the first, which is a Bayonet Wound.)

Site.	No. of cases.	Days under treatment.				Hospital days.				Convalescent days.			
		Total.	Highest.	Lowest.	Average.	Total.	Highest.	Lowest.	Average.	Total.	Highest.	Lowest.	Average.
Leg	1	24	—	—	24·0	3	—	—	3·0	21	—	—	21·0
Leg	21	1138	199	18	54·1	518	175	5	24·6	620	84	8	29·5
Foot	6	467	153	20	77·8	328	146	3	54·6	139	43	7	23·1
Thigh	20	1796	276	14	89·8	956	249	9	47·8	840	133	14	42·0
Buttock	4	320	213	30	80·0	209	172	3	52·2	112	41	15	28·0
Back	12	720	192	23	60·0	392	166	3	32·6	332	58	11	27·6
Shoulder	9	505	201	32	56·1	258	151	4	28·6	247	50	6	27·4
Arm	19	918	118	11	48·3	266	109	3	14·0	652	86	5	34·3
Hand	14	396	68	11	28·2	120	50	3	8·5	275	44	5	19·6
Neck	3	129	53	39	43·0	44	24	10	14·6	85	43	15	28·3
Face	5	223	134	13	44·6	141	122	3	28·2	82	35	9	16·4
Eye	2	74	42	32	37·0	27	18	9	13·5	47	24	23	23·5
Palate	1	27	—	—	27·0	3	—	—	3·0	24	—	—	24·0
Scalp	10	267	48	16	26·7	70	20	3	7·0	197	45	9	19·7
Thorax	1	68	—	—	68·0	9	—	—	9·0	59	—	—	59·0

TABLE D.

Summary of Surgical Tables.

Disease.	Cases.	Days.		
		Total.	Hospital.	Convalescent.
Dislocations	13	466	117	349
Lacerated wounds and contusions	87	2,698	871	1,827
Burns	6	158	78	80
Hernia	55	2,435	1,007	1,428
Abscess	38	1,343	475	868
Mastoiditis and otitis media	19	1,133	379	754
Displaced semilunar cartilage	10	538	168	370
Hæmorrhoids	21	714	283	431
Periostitis	8	344	97	247
Ulcers	11	428	161	267
Synovitis	69	3,882	897	2,985
Appendicitis	48	2,642	1,061	1,581
Concussion	10	371	118	253
Varicocele	9	453	161	292
Varicose veins	27	1,134	418	716
Infection of connective tissue	101	3,450	1,019	2,431
Sprains	36	1,299	364	935
Fractures	94	4,833	1,854	2,943
Miscellaneous	27	1,272	416	856
Totals	689	29,593	9,974	19,619
Expeditionary Force Cases.				
Miscellaneous	25	1,370	648	722
Bayonet wounds	1	24	3	21
Gunshot wounds	127	7,052	3,341	3,711
Totals	153	8,446	3,992	4,454
Total, all surgical cases	842	38,039	13,966	24,073

TABLE E.
General Medical Cases.

Disease.	No. of cases.	Days under treatment.				Hospital days.				Convalescent days.			
		Total.	Highest.	Lowest.	Average.	Total.	Highest.	Lowest.	Average.	Total.	Highest.	Lowest.	Average.
Respiratory:													
Epistaxis	1	16	—	—	16·0	11	—	—	11·0	5	—	—	5·0
Coryza	96	3162	125	8	32·9	925	22	1	9·6	2237	121	4	23·3
Tonsillitis	23	758	99	13	32·8	248	21	4	10·7	510	78	6	22·1
Pharyngitis	6	154	37	17	25·6	59	17	5	9·8	95	36	8	15·8
Laryngitis	4	162	84	14	40·5	31	17	3	7·7	131	78	11	32·7
Bronchitis	104	3691	111	9	35·4	1319	48	1	12·6	2372	65	4	21·8
Asthma	3	156	65	28	52·0	31	14	6	10·3	125	59	14	41·6
Broncho-pneumonia	11	485	90	24	44·0	198	37	12	18·0	287	61	6	26·0
Pneumonia	77	3167	111	26	41·1	1294	63	4	16·8	1873	84	5	24·3
Pleurisy	40	1569	109	12	39·2	501	26	3	12·5	1068	76	4	26·7
Empyema	2	45	27	18	22·5	18	12	6	9·0	27	21	6	13·5
Alimentary:													
Stomatitis	6	176	39	21	29·3	99	34	6	16·5	77	22	5	12·8
Gastritis	52	2027	126	7	38·9	667	59	3	12·8	1360	119	2	26·1
Gastric ulcer	1	33	—	—	33·0	11	—	—	11·0	22	—	—	22·0
Duodenal ulcer	1	48	—	—	48·0	6	—	—	6·0	42	—	—	42·0
Appendicitis	1	16	—	—	16·0	9	—	—	9·0	7	—	—	7·0
Constipation	4	62	21	12	15·5	19	7	3	4·7	43	18	7	10·7
Diarrhœa	3	135	61	33	45·0	55	27	12	18·3	80	34	21	26·6
Jaundice	7	266	67	25	38·0	131	32	11	18·7	135	35	10	19·2
Nephritis	14	667	92	20	47·6	251	37	5	17·9	416	55	7	29·7
Circulatory:													
Phlebitis	1	47	—	—	47·0	20	—	—	20·0	27	—	—	27·0
D.A.H.	27	1044	91	9	38·6	330	37	2	12·2	714	59	3	26·4
Nervous:													
Neurasthenia	10	368	75	18	36·8	77	23	1	7·7	291	72	11	29·1
Neuritis	6	283	67	39	47·1	110	32	8	18·3	173	38	19	28·8
Chorea	1	33	—	—	33·0	20	—	—	20·0	13	—	—	13·0
Facial paralysis	3	119	49	23	39·6	46	19	12	15·3	73	37	8	24·3
Headache	2	97	58	39	48·5	64	55	9	32·0	33	30	3	16·5
Phantom tumour	1	18	—	—	18·0	8	—	—	8·0	10	—	—	10·0
Herpes	1	29	—	—	29·0	14	—	—	14·0	15	—	—	15·0
Skin:													
Eczema	3	202	89	51	67·3	60	39	5	20·0	142	73	23	47·3
Impetigo	1	14	—	—	14·0	12	—	—	12·0	2	—	—	2·0
Purpura	1	16	—	—	16·0	11	—	—	11·0	5	—	—	5·0
Pityriasis rosea	1	30	—	—	30·0	15	—	—	15·0	15	—	—	15·0
Myalgia	20	550	44	12	27·5	165	22	1	8·2	385	38	4	19·2
Gout	8	383	106	25	47·8	121	19	7	15·1	262	87	10	32·7
Rheumatism	106	4825	128	10	45·5	1390	50	4	13·1	3435	116	4	32·4
Debility	15	583	77	23	38·8	170	19	4	11·3	413	73	9	27·5
Cerebro-spinal fever convalescent	1	45	—	—	45·0	3	—	—	3·0	42	—	—	42·0
Deafness	1	56	—	—	56·0	49	—	—	49·0	7	—	—	7·0
Conjunctivitis	1	42	—	—	42·0	10	—	—	10·0	32	—	—	32·0
Malaria	1	37	—	—	37·0	10	—	—	10·0	27	—	—	27·0
Heat-stroke	3	106	40	32	35·3	26	12	6	8·6	80	32	20	26·6

TABLE F.
Expeditionary Force—Medical Cases.

Disease.	No. of cases.	Days under treatment.				Hospital days.				Convalescent days.			
		Total.	Highest.	Lowest.	Average.	Total.	Highest.	Lowest.	Average.	Total.	Highest.	Lowest.	Average.
Trench feet	17	499	65	12	29·3	83	10	3	4·8	416	55	5	24·4
Rheumatism	7	236	66	11	33·7	36	10	3	5·1	200	59	8	28·5
Gastritis	1	20	—	—	20·0	4	—	—	4·0	16	—	—	16·0
Shell-shock	4	221	78	29	55·2	114	60		28·5	107	56	14	26·7
Neurasthenia	3	151	96	12	50·3	29	21	3	9·6	122	75	9	40·6
Malaria	2	22	11	11	11·0	6	3	3	3·0	16	8	8	8·0
Jaundice	1	12	—	—	12·0	5	—	—	5·0	7	—	—	7·0
D.A.H.	1	12	—	—	12·0	5	—	—	5·0	7	—	—	7·0
Bronchitis	1	12	—	—	12·0	5	—	—	5·0	7	—	—	7·0
Diarrhœa	1	12	—	—	12·0	5	—	—	5·0	7	—	—	7·0
Myalgia	1	31	—	—	31·0	4	—	—	4·0	27	—	—	27·0
Eczema	1	25	—	—	25·0	11	—	—	11·0	14	—	—	14·0
"Gassing"	2	136	68	68	68·0	12	6		6·0	124	62	62	62·0
Nephritis	1	29	—	—	29·0	10	—	—	10·0	19	—	—	19·0
Empyema	1	58	—	—	58·0	20	—	—	20·0	38	—	—	38·0

varies far more markedly than even that of a civilian general hospital. The specific fevers, epilepsy, organic heart disease in certain forms, malignant disease, and tuberculosis of lungs, bones, and joints are all excluded from these tables. Traumata form a large proportion of the surgical cases, and respiratory diseases of the medical; cases grouped under the heading "D.A.H." (disordered action of heart) are chiefly, if not wholly, explicable by excess of tobacco smoking.

TABLE G.

Summary of Medical Tables.

Disease.	Cases.	Days.		
		Total.	Hospital.	Convalescent.
Gastritis	52	2,027	667	1,360
D.A.H.	27	1,044	330	714
Coryza	96	3,162	925	2,237
Tonsillitis	23	758	248	510
Pharyngitis and laryngitis	10	316	90	226
Bronchitis	104	3,691	1,319	2,372
Broncho-pneumonia	11	485	198	287
Pneumonia	77	3,167	1,294	1,873
Pleurisy	40	1,569	501	1,068
Myalgia	20	550	165	385
Rheumatism	106	4,825	1,390	3,435
Debility	15	583	170	413
Heat-stroke	3	106	26	80
Nervous	24	947	339	608
Skin	6	262	98	164
Miscellaneous	56	2,230	854	1,376
Totals	670	25,722	8,614	17,108
Expeditionary Force Cases.				
Trench feet	17	499	83	416
Rheumatism	7	236	36	200
Shell-shock	4	221	114	107
Neurasthenia	3	151	29	122
"Gassing"	2	136	12	124
Miscellaneous	11	233	75	158
Totals	44	1,476	349	1,127
Total, all medical cases	714	27,198	8,963	18,235

TABLE H.

Summary of All Tables.

—	Cases.	Days.		
		Total.	Hospital.	Convalescent.
General medical	670	25,722	8,614	17,108
General surgical	689	29,593	9,974	19,619
Expeditionary Force, medical	44	1,476	349	1,127
Expeditionary Force, surgical	153	8,446	3,992	4,454
All cases	1,556	65,237	22,929	42,308

But little in the way of comment is necessary. Dislocations are fewer than anticipated; the large number of cases of synovitis, displaced semilunar cartilage, and sprains suggest that a course of physical drill is sometimes too zealously pursued. Considering the age of many of the recruits of the New Army, the small number of cases of variocele is surprising. Among the Expeditionary Force patients it deserves remark that there is only one case of bayonet wound, and that wounds of the shoulder, buttock, thigh, and foot took longest to heal.

Among the medical cases, acute respiratory diseases supply nearly half the total, and bronchitis and rheumatism account for almost one-third. The neurasthenia of the Expeditionary Force cases was disposed of in half as long again as that of the general cases, and shell-shock required an even longer time for recovery. The cases of "gassing" frequently complained of pain in the second and third intercostal spaces below the outer third of the clavicle.

The average duration of "convalescence" in a surgical case is over 28 days, and in a medical case over 25 days. The total cost of these "convalescent days" to all the auxiliary hospitals was almost £6350, for which sum a battalion and a half was restored to health.

I desire to thank Lieutenant-Colonel W. Turner, R.A.M.C., the Officer-in-Charge of the Connaught Hospital, for his consent that I should undertake this investigation, and for making it possible for me to do so.

Aldershot.

TWO CASES OF PLUMBISM FROM UNUSUAL SOURCES.

BY ARTHUR J. HALL, M.A., M.D. CANTAB., F.R.C.P. LOND.,

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LEAD poisoning is one of the dangers to which all members of civilised communities are more or less exposed. In the case of persons living in certain districts where the water readily absorbs lead, and in the case of those who work in lead, the existence of this danger is fully recognised. Lead workers, in fact, are nowadays so thoroughly inspected and watched by a paternal government that they are apt to attribute to this poison any ills from which they suffer, and, often on very slender grounds, to claim compensation for their supposed plumbism. On the other hand, in what one may describe as "sporadic" cases, the possibility of plumbism is often not thought of, and unless the disease presents itself in a very striking manner frequently gives rise to errors of diagnosis.

It is curious to contrast the regularity with which we look at a patient's tongue and the rarity with which we look at his gums. And yet it is very rare to see a case of plumbism in which a careful inspection of the gums does not reveal the blue line at some part of the gum margin. One reads of the blue line being absent in persons whose teeth are kept scrupulously clean, and theoretically that is possible; but, in my experience, a careful search will usually find it, even in the best-kept mouths of those suffering from symptoms of plumbism. Within the last few months I have seen three "sporadic" cases of plumbism which were entirely unsuspected, two were diagnosed as gall-stones and the third as alcoholic gastritis. In all three cases the blue line was present. In none of them had it been looked for. In two of them the source of the poison was difficult to ascertain, and as these cases acquired the poison in a rather unusual manner they seem worth recording.

CASE 1.—On July 30th, 1915, I was asked to see a man aged 56 in consultation with his medical attendant. He was a steel melter by trade and did not use lead in any form at his work. For the last year or two he had been liable to "gastric attacks" and had suffered from constipation. For the last five weeks he had felt uncomfortable after food, had

lost appetite, and had had some vomiting. He was not obviously anæmic and had no headache. He is a total abstainer. There were no abnormal physical signs in the abdomen. Examination of the gums showed a well-marked blue line. A diagnosis of plumbism was made and the question of the water-supply was carefully considered. He had lived in the same house for eight years; it was situated in a row with the ordinary city supply of water. His wife is always careful to let the tap run before using the water for drinking purposes. Nobody else in the house had had any symptoms. It therefore seemed unlikely that the water-supply was the cause, for although the water in this district has in the past been a fertile source of lead poisoning, yet for many years this trouble has ceased in the Sheffield city area. However, as after further inquiry this seemed the most likely source, it was arranged to have the water-supply analysed. Before this was done, however, the true source of the poisoning was found. The work of a steel melter is exceedingly hot. These men sweat profusely and are obliged to drink large quantities of liquid at their work. Most of them drink non-alcoholic beverages, varying from cold tea to ginger beer, lemonade, &c., according to taste. They send out for their drinks to some small shop near the works, which does quite a considerable regular trade in supplying these beverages. For some years this patient's drink has taken the form of "horehound beer," which was always obtained at the same shop. He informed us, however, that whilst formerly they had sold it in stone jars, recently they had kept it in large barrels in the cellar and "drawn" it up into the shop by an ordinary "beer-tap." This meant several feet of lead piping for the acid solution to pass through. The medical officer of health kindly undertook to obtain a sample of the "horehound beer" as drawn from the tap for the consumer and found it contained *one grain of lead per gallon*. I have no doubt that many others who bought their drink from this shop suffered from plumbism, but I have not had time to make inquiries.

In the second case the source of the poison was more difficult to trace.

CASE 2.—In September, 1914, I was asked to see a man, aged 41, who had been suffering for two months from recurring attacks of abdominal pain. The history was very vague and indefinite, and it had been diagnosed as some form of "gastritis." There had been no headache, no vomiting, and no constipation. I examined the patient and could find no physical signs of disease. The consultation took place in the evening in rather a bad light. The gums were examined and seemed normal. There was no obvious pallor of the skin. We retired to talk the case over and returned to interview the patient without having arrived at any definite conclusion as to the diagnosis. On reaching the bedroom his wife, whom I had not seen previously, volunteered the statement that her husband's pain was often so severe that he would have to get out of bed and go on his knees on the floor until a paroxysm was over. This was evidently some form of colic, and I determined to look more carefully at the gums. With the help of a good light and a lens the presence of definite lead granules was made out in one or two places. A diagnosis of plumbism was therefore made and the question of its source considered. This seemed at first sight fairly obvious. The house was situated in the country and had its own separate water-supply from about half a mile away. Something had recently gone wrong with the hot water-supply and the patient had tried to mend it with white lead. As this failed a new lead pipe had been put in for the hot water. The family had been away for a holiday and during their absence it was supposed that the cook had drawn water from the hot supply to fill the kettle for the patient's tea in the morning. This seemed to explain satisfactorily why nobody else in the house was affected. Traces of lead were found in the patient's urine. A sample of the hot tap-water was examined and found to contain a very slight trace of lead.

I heard nothing more of this patient for 11 months, until August, 1915, when I received a letter from another medical man, partner of the one with whom I saw the patient previously, saying that he was sending a patient to see me suffering from gall-stones, and presenting nervous symptoms with tremors suggesting multiple sclerosis. There was not a word as to my having seen the patient before or a suggestion as to plumbism. I was therefore considerably surprised to see my former patient walk in. He was extremely pallid, looked very ill, and, in addition to a commencing musculo-spiral paralysis of the right side, had very considerable tremors of the hands. His gums now showed an extreme and complete blue line. He told me that he had had another attack of pain in January, 1915, and after that was free from it until July, 1915, when the attacks became more severe and had been gradually getting worse, whilst the tremor and loss of power in the right arm had been coming on for the last week. I asked him about the lead poisoning, and he hinted in a very kindly and courteous manner that, seeing that the symptoms had recurred after the water-supply had been rectified, and that nobody else in the house had suffered similarly, they had abandoned the diagnosis of lead poisoning and thought it must be something else. His own medical attendant had gone to the front and apparently the partner who wrote to me had not heard any details of the previous episode. I pointed out to the patient in the strongest manner I could that there had never been the least possible doubt as to the nature of his illness, that he was undoubtedly endangering his life by absorbing lead from some undiscovered source, and that he must spare neither time nor money in finding out where it was coming from. I quite agreed that we must abandon the water-supply as the cause of the trouble, probable as it seemed at first. I think he realised that I was in earnest, but he could not think of any possible source of poisoning, and I advised him to go right away from all his present surroundings for three months. Just as he was leaving he said, "By the way, doctor, it has just occurred to me, could I get this from handling lead shot?" The solution of the mystery was now clear. Briefly it was as follows. He was very fond of his garden, and in order to protect his fruit and flowers from the birds carried with him an air-gun to shoot the birds whenever he went into the garden. In every suit of clothes he reserved the right-hand vest pocket for the little lead pellets used in his gun, so that at any time he could quickly have a shot at any bird he saw. He had also acquired a habit of constantly putting the finger and thumb of his right hand into this vest pocket and fingering these pellets. I examined the vest pocket in the suit he had on at his visit, and found it half full of small lead pellets, and on turning out the contents there was quite a heap of fine dust which proved to be almost entirely composed of lead. (I have to thank my colleague, Professor Wynne, F.R.S., for kindly analysing the dust from this and the corresponding vest pockets of his other suits of clothes, all of which consisted almost entirely of lead.) The patient had an extremely severe attack of colic, lasting off and on for some days after I saw him, and symptoms of paralysis appeared in the left hand also, but he was by this time so saturated with lead that such a thing was to be expected. He has now recovered. How far he is permanently damaged one cannot as yet say, but at present there is no evidence of kidney disease.

Case 2 is particularly interesting from more than one side. Here was an intelligent, educated man, and yet his training was so little towards the scientific side that, although told he had lead poisoning and the evidence on which that was based—namely, the visible lead-line on his gums—he never connected it with his pockets full of lead dust, and concluded that his medical advisers were wrong. It is also of interest to those who have to deal with lead poisoning due to occupation. This man, by constantly playing with the lead pellets in his pocket, was grinding them one against the other and rubbing off fine lead dust. This would be aided further by every movement of walking or bending. The result was that the thumb and first finger of the right hand would be soiled with fine lead dust every time he put them into his vest pocket. He would thus soil any food eaten with the fingers, unless he always washed thoroughly first. But even if he washed before meals the odds are that his hand would go into the pocket and get soiled again between the time of washing and that of eating his food. It requires the training of a modern surgeon to keep one's hands out of favourite pockets after

washing and whilst waiting to use them. This manner of taking in lead is similar to that which is found in hand-file cutters. They cut the file with a hammer and chisel, and for this purpose the file is laid on a soft block of lead. Each time the chisel strikes the file a little lead dust is knocked off the bed. In handling the file and turning it over the man constantly soils his fingers with lead dust. He then contaminates his food with lead from his hands.

During recent years it has been suggested that in the case of file-cutters, and possibly in the case of other lead-workers, this source of poisoning, by contamination of the food by lead-soiled hands, is probably of less importance than was previously thought, and that it is to the dust-laden air of the workshops and the respiration of fine lead dust that we must rather attribute the poisoning. This view seems to be based on certain animal experiments which showed that plumbism occurred more readily when lead dust was sprayed in the air than when the animals were fed on food containing lead. Whether it is right to conclude that similar difference in susceptibility exists also in man seems open to question. In the case I have just related it is quite evident that the poison must have been conveyed by the hands to the food and absorbed from the alimentary canal. No dust would be likely to fly out of a vest pocket. If this was sufficient to produce severe plumbism in this case, there seems no reason why it should not be the same in the case of the file-cutters. It is obviously an important point as regards preventive measure, and I think we should be very cautious in accepting the view that persons who handle lead dust acquire the poison by their respiratory passages rather than their digestive system.

In the history of Case 2 it seemed at first sight curious that the man should go so long without a recurrence of symptoms. The explanation seems to be that during the first few months of the year he was not shooting birds in the garden, as there was nothing for them to pick, but that with the advent of early summer his bird-shooting began again vigorously.

In conclusion, I should like to emphasise the clinical importance of Burton's line on the gums. Recently some doubt has been thrown on its hæmatogenous origin, and it has been suggested that it may be due to lead dust in the mouth, deposited in the epithelium of the gum. If that is so, it follows that a person may have a blue line without having absorbed lead into the circulation. It is claimed that this happens in lead-workers, and it is a point which is frequently raised in compensation cases. It is impossible here to go into the matter fully. Whether it is true or not in the case of lead-workers, there is no doubt whatever that in ordinary "sporadic" cases of plumbism the lead-line is due to lead salts deposited in the gum from the blood, and if it is present, even though the symptoms are "atypical" and incomplete, no pains should be spared to find the source of the poison.

Sheffield.

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TONSILS AND CHRONIC CERVICAL ADENITIS.

BY H. GARDINER, M.S. LOND., F.R.C.S. ENG.,
ACTING ASSISTANT SURGEON, ROYAL FREE HOSPITAL; LATE SURGICAL REGISTRAR, GUY'S HOSPITAL.

THE vexed question of the relation of the tonsils to the source of infection in cases of chronic cervical adenitis has been, and is being, much debated. This indecision seems largely, if not entirely, due to a lack of direct evidence of the infectivity of the tonsils in these cases. The evidence that seems to carry most weight with the general surgeon is the clinical evidence of the presence or absence of enlargement of the tonsil, and in the absence of such enlargement the tendency is to deny the probability or even possibility of the tonsil being the source of infection. Such an attitude seems scarcely reasonable in view of the fact that repeated attacks of inflammation frequently cause these organs to become sclerosed and "atrophic," and consequently less able to deal with organisms than when they are of normal size and can react by hyperplasia.

Carmichael[1] in 1909 found that a high percentage of tuberculous tonsils were atrophic, and that out of 50 cases of chronic cervical adenitis 7 showed the presence of the tubercle bacillus in the tonsils. Moreover, it seems likely that these small sclerosed tonsils may even be an increased source of danger, for they combine two dangerous conditions: (1) Crypts with wider openings on the buccal surface than normal, and therefore presumably a facilitated entry for organisms; and (2) atrophy of the lymphatic tissue to deal with this invasion. Some confusion in this matter is also, no doubt, due to the frequent association of other more evident sources of infection—e.g., otitis media, pediculi capitis, carious teeth, &c.

The following investigation was carried out with the idea of determining what, if any, evidence there was bacteriologically of the infectivity of the tonsils in cases of chronic cervical adenitis in which there was no apparent and obvious source of infection. The investigation was limited to these cases in order that the issue should be as clear as possible. For this reason not only were cases of obvious infection in the regions draining into the cervical glands excluded, but also all cases in which the glands became enlarged from below upwards and where tubercle of the lungs was also present were neglected. The method adopted was as follows.

1. In cases where the tonsils were enucleated they were transferred at once to a sterilised capsule or tin case. The capsule on the deep surface of the tonsil was then incised with all aseptic precautions, and a small portion of the deepest part of the tonsil was removed and inserted into the subcutaneous tissue of a guinea-pig. A culture was also taken from the tonsil in this region and subsequently examined.

2. In cases (only a few) where the tonsil had not been completely enucleated, and where, therefore, the tonsil (never less than two-thirds of the whole gland) was liable to infection from without, this surface was lightly cauterised and the tonsil then dealt with as above.

In this way not only was extraneous infection avoided, but the buccal surface of the tonsil was not touched. It was unfortunately impossible to examine the cervical glands themselves, as these

were not removed at the time of operation, and the number of cases in which such an examination was possible was so small as to be useless for our purpose.

Results of Cases Investigated.

No. of case.	No. of days guinea-pig lived subsequent to inoculation.	Result of inoculation.	Result of culture.
1	19	Local abscess; sterile.	Nil.
2	2	Pneumococcus; Friedländer's bacillus.	—
3	5	Pneumococcus; M. catarrhalis.	Pneumococcus.
4	10	Nil.	—
5	5	,,	M. catarrhalis.
6	9	Tubercle bacillus.	Streptococcus.
7	33	Nil.	—
8	2	Bacillus coli communis.	Bacillus coli communis.
9	36	Tubercle bacillus.	Streptococcus.
10	5	Pneumococcus.	Pneumococcus.
11	?	Nil.	—
12	6	,,	Staphylococcus; pneumococcus.
13	10	Streptococcus.	Streptococcus.
14	5	Tubercle bacillus.	M. catarrhalis.
15	12	Staphylococcus.	Staphylococcus.
16	12	Nil.	Pneumococcus.
17	21	,,	Staphylococcus.
18	21	Streptococcus.	,,
19	21	Nil.	Nil.
20	11	Streptococcus.	M. catarrhalis; streptococcus.
21	17	Nil.	M. catarrhalis.
22	24	,,	Nil.
23	30	,,	M. catarrhalis.
24	50	,,	Bacillus coli communis.
25	44	,,	Pneumococcus; streptococcus.
26	52	Streptococcus; staphylococcus.	Streptococcus; staphylococcus.
27	65	Tubercle bacillus.	Nil.
28	75	Nil.	Streptococcus.
29	16	,,	M. catarrhalis.
30	72	,,	Pneumococcus.

On analysing this table of 30 cases the following facts are clear. Organisms of some sort were found in 24 (i.e., 80 per cent.) of the cases. Of these organisms there were present the following:—

M. catarrhalis	in 7 cases	—i.e., 25·0	per cent.
Staphylococcus	,, 5	,, 16·6	,,
Pneumococcus	,, 7	,, 25·0	,,
Streptococcus	,, 7	,, 25 0	,,
Bacillus coli communis	,, 2	,, 7·0	,,
Tubercle bacillus ...	,, 4	,, 14·3	,,
Friedländer's bacillus ...	,, 1	,, 3·5	,,

In some cases several organisms were found together and in 6 cases nothing was found; but it is possible that in 4 of these cases tubercle bacilli were present, as the guinea-pigs in these died too soon (some from purely accidental causes) for the post-mortem examination to have any absolute negative value. Comparing these results with those of other investigators, Carmichael[1] found 7 cases of tuberculous tonsils out of 50 cases of tuberculous adenitis; Mitchell[2] found 24 cases out of 72; and Kingsford[3] found 7 cases out of 17. These figures only refer to the tubercle bacillus, and they show a fairly wide variability, but there is no mention in the papers from which these figures are taken of the presence or absence of other possible sources of infection.

With regard to the question of the tubercle bacillus, it is interesting to note that in 200 cases of enlarged tonsils (with or without glandular enlargement) Carmichael found only two cases in which the tubercle bacillus was present. Wright,[4] in 1896, found no evidence of the tubercle bacillus in 60 cases of enlarged tonsils "when only the protruding portion was removed." It seems, therefore, that the tubercle bacillus is more frequently present in the tonsil in cases where the cervical glands are enlarged than in simple cases of enlarged tonsils.

With regard, however, to the results as a whole, it appears that in the great majority of cases of chronic cervical adenitis (of the nature selected) organisms are present in the deepest part of the tonsil—a part of the gland, that is to say, in very close relationship to the lymphatic spaces draining into the neck, and it seems not unlikely that their growth there has a marked influence on the enlarged cervical lymphatic glands. The nature of this influence may be one of two kinds: 1. It may be the direct means of allowing organisms to gain access to the lymphatics, and so to the glands. 2. The organisms may so cripple the tonsil as to allow other organisms to enter the lymphatics—organisms which perhaps, as has been held by some, pass through the tonsil without growing there. However this may be, this pathological evidence of the infectivity of the tonsil is supported by the clinical evidence that in a large number of these cases the glandular enlargement disappears after the enucleation of the tonsils; the persistence of the glands in some cases after the removal of the tonsils being explained probably by the low resisting power of the patient to the infection that has already taken place.

Two other points of importance become evident from this investigation: (1) The question as to the value of the enlargement of the tonsil as evidence of its infectivity; and (2) the bearing of the above results on the question of enucleation *versus* partial removal of the tonsil. With regard to the first of these points, I think it cannot be too strongly urged that the size of the tonsil is of no value as evidence of its infection with organisms. In fact, from the evidence of the cases I examined I would go even further and say that the small atrophic tonsil, with its wide-mouthed crypts and deficient lymphoid tissue, is of much more danger to the patient than is the enlarged hypertrophic tonsil. This is a point of the first importance, for it is too frequently the case that surgeons refuse to accept a tonsil as a possible source of infection unless it is obviously enlarged. It is true that a tonsil reacting to infection by vaso-dilatation and hyperplasia is necessarily enlarged, but the tonsil that has undergone repeated attacks of inflammation and has become the seat of almost complete fibrosis with loss of nearly all its glandular substances—it is easy to see how such a tonsil may offer no resistance to bacterial invasion and so show no signs of hyperplasia. In the series of cases tabulated above 18 were of this type and in only three of these were no organisms found.

With regard to the second point—i.e., of enucleation *versus* partial removal—it is clear that all the evidence of this series of cases is in favour of, and in fact demands, the complete operation. For in 80 per cent. of the cases examined organisms were found in the deepest parts of the gland—i.e., immediately adjacent to the capsule. It therefore is not surprising that the partial removal of the tonsil with the guillotine is in many cases followed by no

washing and whilst waiting to use them. This manner of taking in lead is similar to that which is found in hand-file cutters. They cut the file with a hammer and chisel, and for this purpose the file is laid on a soft block of lead. Each time the chisel strikes the file a little lead dust is knocked off the bed. In handling the file and turning it over the man constantly soils his fingers with lead dust. He then contaminates his food with lead from his hands.

During recent years it has been suggested that in the case of file-cutters, and possibly in the case of other lead-workers, this source of poisoning, by contamination of the food by lead-soiled hands, is probably of less importance than was previously thought, and that it is to the dust-laden air of the workshops and the respiration of fine lead dust that we must rather attribute the poisoning. This view seems to be based on certain animal experiments which showed that plumbism occurred more readily when lead dust was sprayed in the air than when the animals were fed on food containing lead. Whether it is right to conclude that similar difference in susceptibility exists also in man seems open to question. In the case I have just related it is quite evident that the poison must have been conveyed by the hands to the food and absorbed from the alimentary canal. No dust would be likely to fly out of a vest pocket. If this was sufficient to produce severe plumbism in this case, there seems no reason why it should not be the same in the case of the file-cutters. It is obviously an important point as regards preventive measure, and I think we should be very cautious in accepting the view that persons who handle lead dust acquire the poison by their respiratory passages rather than their digestive system.

In the history of Case 2 it seemed at first sight curious that the man should go so long without a recurrence of symptoms. The explanation seems to be that during the first few months of the year he was not shooting birds in the garden, as there was nothing for them to pick, but that with the advent of early summer his bird-shooting began again vigorously.

In conclusion, I should like to emphasise the clinical importance of Burton's line on the gums. Recently some doubt has been thrown on its hæmatogenous origin, and it has been suggested that it may be due to lead dust in the mouth, deposited in the epithelium of the gum. If that is so, it follows that a person may have a blue line without having absorbed lead into the circulation. It is claimed that this happens in lead-workers, and it is a point which is frequently raised in compensation cases. It is impossible here to go into the matter fully. Whether it is true or not in the case of lead-workers, there is no doubt whatever that in ordinary "sporadic" cases of plumbism the lead-line is due to lead salts deposited in the gum from the blood, and if it is present, even though the symptoms are "atypical" and incomplete, no pains should be spared to find the source of the poison.

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BY H. GARDINER, M.S. LOND., F.R.C.S. ENG.,
ACTING ASSISTANT SURGEON, ROYAL FREE HOSPITAL; LATE SURGICAL REGISTRAR, GUY'S HOSPITAL.

THE vexed question of the relation of the tonsils to the source of infection in cases of chronic cervical adenitis has been, and is being, much debated. This indecision seems largely, if not entirely, due to a lack of direct evidence of the infectivity of the tonsils in these cases. The evidence that seems to carry most weight with the general surgeon is the clinical evidence of the presence or absence of enlargement of the tonsil, and in the absence of such enlargement the tendency is to deny the probability or even possibility of the tonsil being the source of infection. Such an attitude seems scarcely reasonable in view of the fact that repeated attacks of inflammation frequently cause these organs to become sclerosed and "atrophic," and consequently less able to deal with organisms than when they are of normal size and can react by hyperplasia.

Carmichael[1] in 1909 found that a high percentage of tuberculous tonsils were atrophic, and that out of 50 cases of chronic cervical adenitis 7 showed the presence of the tubercle bacillus in the tonsils. Moreover, it seems likely that these small sclerosed tonsils may even be an increased source of danger, for they combine two dangerous conditions: (1) Crypts with wider openings on the buccal surface than normal, and therefore presumably a facilitated entry for organisms; and (2) atrophy of the lymphatic tissue to deal with this invasion. Some confusion in this matter is also, no doubt, due to the frequent association of other more evident sources of infection—e.g., otitis media, pediculi capitis, carious teeth, &c.

The following investigation was carried out with the idea of determining what, if any, evidence there was bacteriologically of the infectivity of the tonsils in cases of chronic cervical adenitis in which there was no apparent and obvious source of infection. The investigation was limited to these cases in order that the issue should be as clear as possible. For this reason not only were cases of obvious infection in the regions draining into the cervical glands excluded, but also all cases in which the glands became enlarged from below upwards and where tubercle of the lungs was also present were neglected. The method adopted was as follows.

1. In cases where the tonsils were enucleated they were transferred at once to a sterilised capsule or tin case. The capsule on the deep surface of the tonsil was then incised with all aseptic precautions, and a small portion of the deepest part of the tonsil was removed and inserted into the subcutaneous tissue of a guinea-pig. A culture was also taken from the tonsil in this region and subsequently examined.

2. In cases (only a few) where the tonsil had not been completely enucleated, and where, therefore, the tonsil (never less than two-thirds of the whole gland) was liable to infection from without, this surface was lightly cauterised and the tonsil then dealt with as above.

In this way not only was extraneous infection avoided, but the buccal surface of the tonsil was not touched. It was unfortunately impossible to examine the cervical glands themselves, as these

were not removed at the time of operation, and the number of cases in which such an examination was possible was so small as to be useless for our purpose.

Results of Cases Investigated.

No. of case.	No. of days guinea-pig lived subsequent to inoculation.	Result of inoculation.	Result of culture.
1	19	Local abscess; sterile.	Nil.
2	2	Pneumococcus; Friedländer's bacillus.	—
3	5	Pneumococcus; M. catarrhalis.	Pneumococcus.
4	10	Nil.	—
5	5	,,	M. catarrhalis.
6	9	Tubercle bacillus.	Streptococcus.
7	33	Nil.	—
8	2	Bacillus coli communis.	Bacillus coli communis.
9	36	Tubercle bacillus.	Streptococcus.
10	5	Pneumococcus.	Pneumococcus.
11	?	Nil.	—
12	6	,,	Staphylococcus; pneumococcus.
13	10	Streptococcus.	Streptococcus.
14	5	Tubercle bacillus.	M. catarrhalis.
15	12	Staphylococcus.	Staphylococcus.
16	12	Nil.	Pneumococcus.
17	21	,,	Staphylococcus.
18	21	Streptococcus.	,,
19	21	Nil.	Nil.
20	11	Streptococcus.	M. catarrhalis; streptococcus.
21	17	Nil.	M. catarrhalis.
22	24	,,	Nil.
23	30	,,	M. catarrhalis.
24	50	,,	Bacillus coli communis.
25	44	,,	Pneumococcus; streptococcus.
26	52	Streptococcus; staphylococcus.	Streptococcus; staphylococcus.
27	65	Tubercle bacillus.	Nil.
28	75	Nil.	Streptococcus.
29	16	,,	M. catarrhalis.
30	72	,,	Pneumococcus.

On analysing this table of 30 cases the following facts are clear. Organisms of some sort were found in 24 (i.e., 80 per cent.) of the cases. Of these organisms there were present the following:—

M. catarrhalis ...	... in 7 cases	—i.e., 25·0	per cent.
Staphylococcus ...	... ,, 5	,, 16·6	,,
Pneumococcus ...	... ,, 7	,, 25·0	,,
Streptococcus ...	... ,, 7	,, 25 0	,,
Bacillus coli communis	,, 2	,, 7·0	,,
Tubercle bacillus	... ,, 4	,, 14·3	,,
Friedländer's bacillus	... ,, 1	,, 3·5	,,

In some cases several organisms were found together and in 6 cases nothing was found; but it is possible that in 4 of these cases tubercle bacilli were present, as the guinea-pigs in these died too soon (some from purely accidental causes) for the post-mortem examination to have any absolute negative value. Comparing these results with those of other investigators, Carmichael[1] found 7 cases of tuberculous tonsils out of 50 cases of tuberculous adenitis; Mitchell[2] found 24 cases out of 72; and Kingsford[3] found 7 cases out of 17. These figures only refer to the tubercle bacillus, and they show a fairly wide variability, but there is no mention in the papers from which these figures are taken of the presence or absence of other possible sources of infection.

With regard to the question of the tubercle bacillus, it is interesting to note that in 200 cases of enlarged tonsils (with or without glandular enlargement) Carmichael found only two cases in which the tubercle bacillus was present. Wright,[4] in 1896, found no evidence of the tubercle bacillus in 60 cases of enlarged tonsils "when only the protruding portion was removed." It seems, therefore, that the tubercle bacillus is more frequently present in the tonsil in cases where the cervical glands are enlarged than in simple cases of enlarged tonsils.

With regard, however, to the results as a whole, it appears that in the great majority of cases of chronic cervical adenitis (of the nature selected) organisms are present in the deepest part of the tonsil—a part of the gland, that is to say, in very close relationship to the lymphatic spaces draining into the neck, and it seems not unlikely that their growth there has a marked influence on the enlarged cervical lymphatic glands. The nature of this influence may be one of two kinds: 1. It may be the direct means of allowing organisms to gain access to the lymphatics, and so to the glands. 2. The organisms may so cripple the tonsil as to allow other organisms to enter the lymphatics—organisms which perhaps, as has been held by some, pass through the tonsil without growing there. However this may be, this pathological evidence of the infectivity of the tonsil is supported by the clinical evidence that in a large number of these cases the glandular enlargement disappears after the enucleation of the tonsils; the persistence of the glands in some cases after the removal of the tonsils being explained probably by the low resisting power of the patient to the infection that has already taken place.

Two other points of importance become evident from this investigation: (1) The question as to the value of the enlargement of the tonsil as evidence of its infectivity; and (2) the bearing of the above results on the question of enucleation *versus* partial removal of the tonsil. With regard to the first of these points, I think it cannot be too strongly urged that the size of the tonsil is of no value as evidence of its infection with organisms. In fact, from the evidence of the cases I examined I would go even further and say that the small atrophic tonsil, with its wide-mouthed crypts and deficient lymphoid tissue, is of much more danger to the patient than is the enlarged hypertrophic tonsil. This is a point of the first importance, for it is too frequently the case that surgeons refuse to accept a tonsil as a possible source of infection unless it is obviously enlarged. It is true that a tonsil reacting to infection by vaso-dilatation and hyperplasia is necessarily enlarged, but the tonsil that has undergone repeated attacks of inflammation and has become the seat of almost complete fibrosis with loss of nearly all its glandular substances—it is easy to see how such a tonsil may offer no resistance to bacterial invasion and so show no signs of hyperplasia. In the series of cases tabulated above 18 were of this type and in only three of these were no organisms found.

With regard to the second point—i.e., of enucleation *versus* partial removal—it is clear that all the evidence of this series of cases is in favour of, and in fact demands, the complete operation. For in 80 per cent. of the cases examined organisms were found in the deepest parts of the gland—i.e., immediately adjacent to the capsule. It therefore is not surprising that the partial removal of the tonsil with the guillotine is in many cases followed by no

diminution in the size of the glands; in fact, this procedure may do more harm than good, as it not only leaves part of the infected organ behind, but also leaves a raw surface to heal by scarring and the subsequent formation of those very pocket-like crypts which seem so dangerous.

Conclusions.

1. In the majority of cases (80 per cent.) of chronic cervical adenitis where no obvious source of infection is present the tonsils are infected.
2. The size of the tonsil makes no difference to their infectivity, except that the small fibrotic variety is likely to be more dangerous than the large.
3. The number of cases in which tubercle bacilli are present is relatively small, but is larger than in simple cases of enlarged tonsils.
4. The frequent presence of other organisms than the tubercle bacillus in these cases suggests that a large proportion of the so-called chronic tuberculous glands are in reality chronic septic glands.
5. The organisms are present in the deepest parts of the gland, and are therefore only removed by operations involving complete enucleation.

My sincere thanks are due to the surgeons and assistant surgeons at Guy's Hospital; to Mr. J. F. O'Malley, of the Evelina Hospital for Children; and to Mr. G. E. Waugh, of Great Ormond-street Hospital, for their valuable assistance in providing most of the above cases.

Bibliography.—1. Carmichael: Proceedings of the Royal Society of Medicine, November, 1909. 2. Mitchell: Brit. Med. Jour., July 11th, 1914. 3. Kingsford: THE LANCET, Jan. 9th, 1904, p. 89. 4. Wright: New York Medical Record, June 26th, 1909.

Wimpole-street, W.

SHRAPNEL LOCATED AT BACK OF ORBIT; SUCCESSFUL EXTRACTION.

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Rifleman ——, aged 21, was struck by two shells near Ypres on July 4th. One struck him in the face, "blinding" him, and the other inflicted several wounds on the left arm. At the first dressing station shrapnel was removed from the arm, and the eyes, which could not be opened, were bandaged. He was conveyed to Poperinghe, where it was found that the left eye was uninjured and the vision of it good. The lids of the right eye were separated with difficulty owing to swelling of the conjunctiva, and the vision was reduced to bare perception of light. Five days later he was transferred to Boulogne and thence to King George Hospital, where he was admitted on July 23rd.

On admission the patient showed evidence of shock and suffered from pain in the right side of the head and from insomnia. There was some "peppering" of the nose and left cheek with small fragments of shrapnel, and there were several suppurating wounds in the left upper arm. The right eye showed great chemosis, the conjunctiva overlapping the cornea and rendering separation of the lids difficult and painful. There was slight proptosis. The anterior chamber contained a little greyish-green pus, and there was no vision. The vision of the left eye was normal, pupil active, no photophobia. No external wound in the neighbourhood of the right orbit could be detected. A radiogram taken by Dr. W. Ironside Bruce showed a large fragment of shapnel, apparently situated deeply in the right orbit adjacent to the base of the skull. No cerebral symptoms were detected though the patient was "nervy," complained of severe headache, and could not sleep. His temperature rose at night to about 101°F., but this might be due to the condition of his left arm.

On July 28th, under chloroform and ether administered by Dr. P. F. Wilson, I examined the right eye and excised it; in cutting the optic nerve my scissors scraped against metal. Some small splinters of bone were removed on irrigating the socket. I then passed the index finger deeply into the orbit,

Skiagram showing the piece of shrapnel *in situ*. The inset shows projectile, exact size.

and at its apex detected a large piece of metal jammed into or against the inner and posterior walls of the orbit. I passed a pair of stout sequestrum forceps along my finger and seized the fragment; rotating it gently, I freed it from the bone and cautiously extracted it. No other foreign body nor loose fragments of bone were to be found, and after thorough irrigation with boracic acid lotion some iodoform was puffed in, a fair-sized drainage-tube from the back of the orbit inserted, and the orbit lightly dressed. Mr. J. Eduardo Rivera (house surgeon) assisted me. Before the patient recovered from the anæsthetic Mr. F. S. Piggott scraped the sinuses in the left arm and inserted tubes.

The excised eye was in a condition of panophthalmitis, the vitreous chamber contained pus; the recti and their sheaths were adherent to the globe and a furrow appeared to have been cut in the equatorial region of the eye on its inner aspect. Presumably the foreign body had entered through the palpebral fissure and passed between the globe

and inner wall of the orbit. The size and shape of the piece of shrapnel removed are shown in the accompanying sketch, and the radiogram (supplied by the kindness of Dr. G. Harrison Orton) indicates the location of the foreign body in relation to the orbit and the base of the skull.

The progress of the patient was uninterrupted to complete recovery. He ate and slept well, the headache disappeared, and the pyrexia subsided. The right orbit is quite healthy and will soon be fitted with a glass eye. The vision of the left is 6/6 and J.1.

Albert-terrace, Regent's Park.

MASSAGE IN THE AFTER-TREATMENT OF THE WOUNDED.

BY JAMES B. MENNELL, M.A., M.D., B.C. CANTAB., M.R.C.S., L.R.C.P. LOND.

FOR some months past reports have, with varying frequency, reached me the tendency of which is to show that all is not as well as it might be with the after-treatment of some of our wounded, so far as that consists of massage. Letters that I have received indicate that some operators are unnecessarily violent in their massage treatment, a fact borne out by the attempts of patients to evade their masseur on his arrival at hospital in order to escape treatment. Another letter tells of "the strange things done under the name of massage," and another from a county town in the Midlands runs as follows: "I believe Madame ——'s method is being used here. There are people doing it in hospital after only 12 lessons." Of course, I am unable personally to vouch for the truth of this statement, but the good faith of the writer is patent throughout the letter.

Let me hasten before going farther to offer praise where it is certainly due. Most of the massage work that is being performed for the wounded is carried out by members of the Almeric Paget Massage Corps. Many members of this corps are giving their services voluntarily, some with magnificent self-sacrifice and others for no more reward than their bare board and lodging, while the remuneration of those who receive any cash payment at all is quite inadequate to the services performed. Most members of this corps hold the certificate of the Incorporated Society of Trained Masseuses, and no greater proof of efficiency can be obtained in this country. I have had the highest respect for the examination that precedes the granting of this certificate since it was my privilege to witness its practical portion in June of last year. A moment's thought, however, shows the great difficulty of estimating the sufficiency of a candidate's technique for all varieties of treatment that she may be called upon to perform in practice. It cannot but be that some are certificated who may be unfitted by temperament, training, or experience to undertake the special class of work to which they are now called —however great may be their skill and proficiency in other branches of massage. For the massage treatment of recent injury and that applicable to any chronic ailment differ fundamentally both in principle and practice.

My evidence compels me to the opinion that a very real evil exists; and I am anxious to do what I can to draw to it the attention of those surgeons whose good work is being undone by injudicious after-treatment, to explain its origin, and to venture a suggestion by way of remedy. The evil originates partly in ignorance and partly in misconception. The masseur arrives at the bedside, or receives his patient elsewhere labelled "Massage required for this case." He finds, let us say, a scar on a limb and one or more joints quite stiff, and the patient complains of pain—perhaps constant, perhaps only on attempted movement. The masseur then elicits what information he can from his patient, which usually amounts to the date of wound and of operation, if any. He can learn little or nothing as to what tissues were injured or what was done at the operation, unless he has the good fortune to find a radiograph to help him. Even this is of doubtful service seeing that the masseur is no X ray expert. He thus learns little or nothing of what has happened, and can only surmise that the joints are to be bent or straightened. He does not know—usually it is impossible for him to discover—how far either movement may be impossible owing to anatomical injury or deficiency. And let us remember in further extenuation that the masseur is not a diagnostician to distinguish, let us say, a neurosis from a traumatic neuritis, or symptoms due to the severance of a nerve from those subsequent to extensive operation for tendon suture. Hence he guesses at the task which he believes that his surgeon has set him, tackles the obvious cause of disability, and seeks to obtain movement in all joints that lack it, to the limit either of his ability or of the endurance of his patient.

The misconception under which the masseur usually labours is that stiffness is due to the presence of adhesions, which it is his duty to "break down." But here is no part of the work of the masseur; it is the surgeon's work and is performed by him—under an anæsthetic if necessary. Thus, when a patient is recommended for massage there are (or should be) no adhesions in the joints capable of being "broken down." Limitation of movement may be due to anatomical defect; if so, the masseur should be informed. It may be due to the contraction of a scar, of muscles, of ligaments, of tendons, or to a general matting together of the soft parts. No amount of sudden stretching or pulling can effect a cure of any of these conditions. Progress must be slow, and the more gently the treatment is performed the more rapid will be the result. Nature has ordained that the most rapid and perfect method of curing an injured limb is to restore its function, and, if use is possible, the more it is used the quicker will be the cure. If the limb is subjected to treatment that causes pain, some period of time during which it might have been in use is wasted by the necessity of keeping it at rest while the pain passes off. Thus the dose of movement given daily should be the maximum that does not cause more than a transitory twinge. If painless movement is impossible, it is the masseur's duty to attempt so to relieve the irritability of the nerves, or so to manipulate the soft parts, that he may be able on a subsequent occasion to give his first dose of painless passive movement. A little later he can prescribe ever-increasing doses of painless active movement.

Then, again, the disability may be due to what we can only describe as the "functional joint." By this is meant a joint in a limb which, having received injury, is found on examination to be rigid, but which is possessed of perfect function

when the patient has been anæsthetised, the rigidity returning as the anæsthesia passes off. Here we have a local evidence of traumatic neurasthenia—it has been called hysterical, but if this be the nature of the trouble (which is particularly common in childhood) it is often the only evidence of hysteria that the patient will exhibit in a lifetime—and any measure that causes the faintest trace of discomfort (to say nothing of actual pain) can only aggravate the disability. The same applies whenever pain or disability is due to the fact that a nerve-trunk has been bruised or otherwise injured.

When we commence our massage treatment it is essential to remember the general condition of our patients. They may have been in the fighting line for months, and have probably passed through a time of superhuman fatigue and strain. They have been wounded, have probably undergone operation, and many have suffered from septic absorption. Last, but not least, after months of severe physical exercise and training, they are suddenly deprived of any exercise whatever. Small wonder, then, if neurasthenia should be present. And it would surely be better to choose a treatment for their injured limbs that has been proved devoid of pain (even supposing it to be a trifle slower in restoring the use of the limb, which in fact it is not) in preference to one that, by causing suffering, can only prolong and perhaps accentuate the neurasthenic tendency.

Let us now consider briefly the nature of the treatment calculated to restore an injured limb most rapidly. It is common experience that pain and disability go hand in hand. Hence our first duty is to combat pain, and I must, as elsewhere,[1] invoke the name of the late Just Lucas-Championnière as my authority in attempting to describe the treatment that should be administered.

There are three main laws which should govern all massage treatment for a recent injury. They are: 1. Only the most gentle movements possible are to be performed; any irritating (so-called stimulating) movements are prohibited. 2. Any point that is tender or hypersensitive is the last that should receive attention, and the site of wound or fracture must be scrupulously avoided through all the earlier stages of treatment, and especially until normal sensation has been restored. 3. The actual nature of the massage movement that is performed is of minor importance, but it is essential that it should be slow, and gentle, and rhythmical.

Massage treatment on these lines will soon be found to allay any irritability that may exist in the nerve supply of the limb, and as soon as this has been accomplished the dose of mobilisation may be administered. Here the rule must be "little and often," remembering that repeated movements of small amplitude lead to the restoration of a limb far more rapidly than any attempt at free movement; that will follow spontaneously without pain or suffering of any sort if only we will have patience. The movements should be slow as well as of small amplitude, often repeated, and *free from pain*.

As soon as the patient is able to do so, he should begin to exercise each joint in turn: he will be able to do so only if he has escaped suffering during his dose of passive movement. The laws that govern the administration of passive movements apply equally to that of the active movements. As soon as the patient can exercise his joints himself the masseur should begin to administer a dose of resistive exercises, and he may also for the first time allow himself to knead the limb. This should be done gently and slowly, any vigorous or rapid movements being a great mistake, and of course unscientific. Each séance should terminate with a dose of the smooth, gentle, rhythmical stroking. From this point onwards the patient can benefit enormously by the judicious use of the faradic current, which may replace massage treatment entirely or in part. Nothing here said, it should be remarked in passing, must be taken as depreciating the importance rightly attached to electro-therapy.

Immediately the patient is able to make use of mechanical appliances without pain he may almost be left to take care of himself, except in so far as it may be necessary to assist the return of muscular power by the use of the electric current. All that is necessary is to encourage use or check over-use, as the case may be. The dose of exercise may cause a little aching in the limb, but the patient can be told that he may persevere, provided that no œdema follows use and that any pain is relieved entirely within half an hour of the limb being placed at rest. The value of resistive exercises is not, it appears, sufficiently realised; a few minutes of these exercises will restore painlessly far more movement than can ever be obtained by using violence. Moreover, the benefit is lasting.

As regards the number of patients that should be allotted to each masseur, the treatment advocated will allow of his dealing fully and efficiently with five or six cases in two hours, or, if some of them are approaching convalescence, perhaps as many as ten.

By use of the treatment thus briefly indicated the patient will mend as rapidly and as thoroughly as the nature of his injuries permits. He will recover from present pain, he will suffer not at all under treatment, he will sleep better, and any neurasthenic feature will be obliterated by the most efficient method at our disposal.

The means for the complete attainment of this end would be the direct supervision of the work of every masseur by a medical man who has had first-hand experience of the principles and practice of massage and general mechano-therapeutical treatment. This ideal being unattainable because the number of those who have had the necessary experience is limited, some such scheme as the following might possibly be adopted with advantage: 1. A surgeon who recommends a case for massage might make a point of seeing that full information as to what has taken place is conveyed to the masseur. 2. If he can then arrange to examine and question his patient at intervals both as to his progress and treatment, he will at least be able to satisfy himself that no injury is being done. 3. No masseur or masseuse should be allowed to work "on his (or her) own." It should be possible to arrange that in every centre there shall be someone whose sole duty is that of "go-between" from surgeon to masseur, who will prescribe treatment, supervise its administration, and constantly watch the patient's progress. It should usually be practicable to select for this duty someone who has received full training as a nurse in England before she commenced to study massage. Insistence on this qualification would do much to avoid one danger. Training as a nurse inculcates the instinct which is so valuable an asset in the treatment of

[1] Treatment of Fractures by Mobilisation and Massage, passim.

all forms of recent injury—the prevention and relief of suffering. It will serve to counteract the teaching that may have been received in the massage school that pain and discomfort are inseparable from successful treatment, that "massage become painless ceases to be massage and is merely treatment by suggestion," and that the duty of the operator is to give the patient "all he can stand." It would seldom be wise, in my opinion, to entrust such a task to anyone who had received foreign training in massage. Except in certain schools in France, and in rare instances elsewhere on the Continent, the massage taught is too violent to be applicable to recent injury.

Unless some steps are taken in the direction indicated, it is feared that in many a case the success of the surgeon's work will still be in jeopardy, and unnecessary suffering still be inflicted.

Royal Crescent, W.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF TRAUMATIC TETANUS.

A CURIOUS FACTOR COMPLICATING EARLY DIAGNOSIS.

BY JOHN D. HAYWARD, M.D.LOND.,
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THE cases of recovery from acute tetanus are so uncommon that this short account of traumatic tetanus which was treated in the Liverpool Hospital with the British Expeditionary Force may prove of interest. An additional factor of remark in the case is that the position of the bullet itself caused an amount of "lock-jaw" which passed over into the true trismus.

Private ——, 2nd East Surrey, aged 19, enlisted eight months, was admitted to hospital (temporary premises) in France on May 4th, 1915, suffering from shot wound of the right side of the face. There was a small wound in front of the right ear, neither discharging nor painful. The facial nerve was evidently implicated, for there was right facial paralysis; otherwise the patient seemed quite well, except that he was unable to open his mouth more than about a quarter of an inch. On May 5th an X ray negative showed a roundish object, resembling a shrapnel bullet, lying under the zygoma between the condylar process of the jaw and the mastoid. The patient affirmed that the difficulty of opening the mouth had existed from the moment that he was shot, that in consequence he had not had enough food as he could only take slops; he was of opinion that a shrapnel bullet was jammed in the articulation.

On admission the patient seemed well; there was no stiffness of the masseters, of the neck or of the back, no risus, no twitching, and little trouble in swallowing. The mouth was drawn to the left. The history given was that he was in the trenches and was wounded by shrapnel on the afternoon of April 27th. On account of the difficulty of getting away, and because he did not appear to be badly hurt, he remained on duty until April 30th, when he returned to billet. On May 1st he reported to a surgeon, was bandaged and sent to the clearing station at Bailleul; there he had a serum inoculation the fourth day after the injury. He was there three days and was then sent to the base, being admitted to hospital late in the evening of May 4th under the care of Captain Stanley Raw, R.A.M.C. The pulse was good, 80; temperature and urine normal. On the evening of May 7th he complained of stiffness of the neck and difficulty in swallowing; there was a distressed look in the face and marked risus sardonicus; this, of course, more marked on the left side. The masseters were hard and the mouth more closed. The case was transferred to the care of Lieutenant-Colonel Nathan Raw, R.A.M.C., the chief physician of the hospital. On the 8th there was rigidity of the neck and upper portion of the back, the head was retracted, and any movement was painful and induced clonic spasms. Noise and movement increased his distress, so he was removed to a screened-off corner of a quieter ward. There was no discharge from and no tenderness of the wound. An injection of 500 units of antitetanic serum (B. W. and Co.) was made over the epigastrium and one-tenth of a grain of carbolic acid into the erector spinæ. In the evening opisthotonos was well marked; the patient was very distressed, the breathing was rather rapid, and swallowing was very difficult. One-fifth of a grain of carbolic acid was injected and 15 grains of bromide of potassium were administered by the mouth. Through the night severe clonic spasms occurred, with marked opisthotonos; the muscles of the right arm also were hard and rigid. A quarter of a grain of hydrochlorate of morphia was given hypodermically.—9th: After a bad night the patient seemed rather improved. The rigidity of the arm was passing away; the opisthotonos and marked head retraction were unchanged, while clonic twitchings were frequent, especially during sleep; swallowing was still difficult, probably chiefly because of the locking of the jaws. The teeth could now be separated a little on the left side; as he had a good set of teeth it was not possible to pass a stomach-tube without knocking out a tooth. The question of a nasal tube or of nutrient enemata was discussed as he was not getting much food, but neither method was employed; 500 units of serum and a grain of the acid were injected and a mixture containing 10 grains of chlor. hydrat. and 15 grains of bromide of potassium was given three times a day.—10th: A better night had been passed though the risus and spasms had still been present during sleep. The teeth could be slightly more separated; indeed, the tongue was severely bitten several times by getting between the teeth when the clonic spasms occurred. 500 units of serum and 2 grains of acid were injected.—11th: The patient's condition had distinctly improved; he was taking food better, and the rigidity was confined to the neck and the upper half of the back. From this time recovery was uneventful. No more serum was used, but a daily injection of 2 grains of carbolic acid was continued for a few days, and the sedative mixture was continued. On the 12th large patches of serum rash (erythema) occurred. For a few days cough was very troublesome with sticky muco-purulent expectoration. The urine was normal throughout; pulse good, 80 to 100; and the temperature always below normal, close to the 97°, except on one evening when it rose to 99·8°. The teeth could never be separated more than a quarter of an inch. The facial and cervical twitchings became slighter and at longer intervals.

On May 16th an operation was performed by Captain Stanley Raw, when about half a drachm of pus under pressure escaped from the sinus. A flap was made over the zygoma and turned forward; metal was detected with the telephone probe and extracted. It proved to be the nickel casing of a rifle bullet much distorted, having apparently struck some hard substance before reaching the patient (ricochet) and then penetrated to jam between the zygoma, the external meatus, and the ramus close behind and below the condyle.—17th: The patient was doing well. The facial nerve had mostly recovered and he could wrinkle the right side of the face, while the facial lines and the mouth were the same on both sides. The right side of the forehead, however, still remained smooth and immobile. The teeth could now be separated one-third of an inch.—21st: The tongue was still mutilated and was discharging from the severe biting previously received. The gag was gently used to prize open the mouth and a gap of half an inch was obtained. The patient was sent to England well on June 4th. The wound was healed and the mouth could be voluntarily opened over an inch and with help up to 1½ inches. The patient could not walk far yet and the right side of the forehead was smooth, while movement and sensation there were defective, no doubt due to necessary interference with the temporal nerve-supply in making the incision for the removal of the missile.

Acute tetanus has been defined as that developing in less than ten days after injury. As the case

reported exhibited distinct symptoms on the tenth day it was on the borderland of the acute and the subacute. The position of the missile rather masked the earliest symptoms and the increased inability to separate the teeth and the rigidity of the masseters were not noticed until the retraction of the head drew attention thereto. The happy issue suggests that even when given four days after the date of the wound the serum injection may have time to exert influence on a subacute case. Of course, much larger doses of the carbolic acid have been recommended, but the therapeutic value of the doses used and of the bromide seemed satisfactory to those in charge of the case.

CARTRIDGE SHOT IN THE APPENDIX.

BY C. C. BOYLE, M.B., B.CH., B.A.O. N.U. IREL.,
HOUSE SURGEON, SWANSEA HOSPITAL.

DURING the course of an operation on a patient aged 35, at Swansea Hospital, on August 26th, 1915, performed by Mr. Edgar Reid, for advanced tuberculous disease of the Fallopian tubes, the appendix was accidentally found to contain a number of small hard bodies and to be abnormally long—5¾ inches; it was therefore removed. On examining the appendix after removal a number of small lead shot was found in the distal third, together with a small quantity of gritty débris. The organ, however, showed practically no signs of inflammation. The leaden pellets, which were 42 in number, weighed 1 dr. 8 gr., and appeared to be ordinary cartridge shot, such as are frequently found in game, and this was verified by the subsequent history, for the patient had been accustomed to eating frequently rabbits which had been shot. The pellets presumably had been accumulating in the appendix for some time, and the case is of interest in proving the tendency for small foreign bodies to lodge in the appendix.

I am indebted to Mr. Reid for the privilege of reporting the case.

Swansea.

FEVER CASES IN LONDON.—The returns issued by the Metropolitan Asylums Board on Sept. 25th showed that 4064 patients were under treatment in the eight hospitals of the Board. Out of 85 cases admitted on the previous day from 25 parishes and unions 41 were suffering from scarlet fever and the same number from diphtheria.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the executive committee of this society was held on Sept. 17th, Dr. F. J. Allan being in the chair. The accounts presented showed that the sickness claims experienced are under the expectation, in spite of the sums paid to members wounded on active service, which may be classed as an additional risk. The new business has been well up to the average, the combined tables for sickness and endowment assurance still being popular. The rise in locum fees is responsible for many members increasing their sickness benefit in the society as a useful precaution in case of illness. The low rates charged for sickness benefit in comparison with other companies, and the strong financial position the society has attained, no doubt also help to influence these increases. The published list of every asset held by the society shows members exactly in what securities their money is invested, an important statement in these troublous times, and one that undoubtedly contributes largely to the confidence members feel in their society, which, founded in 1884 with no funds, has, in spite of most stringent valuations and heavy writing down of stock values, now amassed funds of over £270 000. Prospectus and all information can be obtained from the secretary, Mr. Bertram Sutton, Medical Sickness and Accident Society, 300, High Holborn, W.C.

Reviews and Notices of Books.

The Operations of Surgery (Jacobson).

By R. P. ROWLANDS, M.S. Lond., F.R.C.S Eng., Surgeon to Guy's Hospital; Lecturer on Anatomy to the Medical School; and PHILIP TURNER, B.Sc., M.S. Lond., F.R.C.S. Eng., Surgeon to Guy's Hospital; Teacher of Operative Surgery to the Medical School. Sixth edition. With 797 illustrations (40 in colour). Vol. I., pp. 1030; Vol. II., pp. 934. London: J. and A. Churchill. 1915. Price £2 10*s*.

THE reputation of Jacobson's "Operations of Surgery" has been so thoroughly established and is so world-wide that the appearance of a new edition cannot but awaken interest in the minds of all English-speaking surgeons. Mr. Jacobson was entirely responsible for the earlier editions, and though he had some assistance in the preparation of the fourth and fifth he was their virtual editor. All these issues we have been able to praise unreservedly.

In the preparation of this (the sixth) edition the guiding hand of Mr. Jacobson is absent, and we started to examine the book with a sense of that loss upon us. But it was soon evident that the old excellence was to be maintained. At the first glance it was clear that the plan of the work had not been altered. Everything to do with each subject is arranged according to the region of the body concerned, and with this arrangement we thoroughly agree, for it must be remembered that the work is intended mainly for those who have recently been appointed to the surgical staff of a hospital, and who do not yet possess the personal knowledge that may be requisite for the satisfactory performance of a particular operation. It is desirable, therefore, that the anatomy of the part should be studied in conjunction with the operation, and this can only be conveniently done when the operations dealing with any region of the body are grouped together. We think, therefore, that the authors have done wisely in adhering to the arrangement previously employed.

The authors had the task of determining what operations should be described and what might be omitted without any loss. At the present time there are so many methods of performing most operations that the reasonable limits imposed by the volumes determined that many operations must be omitted entirely and that others must receive comparatively brief treatment. The principle which has guided the authors is that preference has been given to those operations which they have found the most useful, and this appears to us to be the right principle; for though a special monograph on a subject may not unreasonably describe all the methods which have ever been employed, a general treatise, intended as a guide to those who have not personal knowledge of what is best, ought to assume the didactic position. The preference of the authors serves to the inquirer as an indication of methods which no little experience has shown to be trustworthy. We may mention that in the descriptions of the operations of the special departments of surgery, such as those of the nose, ear, and throat, gynæcology and orthopædics, only the important and well-established operations which a general surgeon can safely perform are considered, and this restriction appears to us to be wise. As to the division of labour, we are told that Mr. Turner is responsible for the sections dealing with the surgery of the head and neck,

chest, and upper limb, and that Mr. G. Bellingham Smith has revised and largely rewritten the chapters dealing with the surgery of the ovary and uterus, while Mr. Rowlands has edited or rewritten the rest of the treatise.

It has, indeed, been found necessary to rewrite no small portion of the work, for the progress of surgery is always introducing new methods and causing us to revise our judgment of those which have been current before. The necessarily considerable recasting of Jacobson's "Operations of Surgery" is very good; the spirit of the earlier edition has been maintained and the treatise has been brought up to date, so that it represents the present-day practice of British surgeons. It will form a trustworthy guide to the young surgeon who is embarking on operating, and surgeons who can hardly be described as young will profit by a perusal of its pages when they have to undertake any operation with which they may not happen to be familiar.

The illustrations are very numerous, in fact they barely fall short of 800 in number. For the most part they are all that can be desired, and it is evident that much care and money have been spent in providing them. Colour has been judiciously employed; for instance, in Fig. 85, which illustrates the relations of the vessels and nerves which are exposed in the ligature of the brachial artery in the middle of the arm, the use of colour enables the reader to appreciate much more easily the various structures involved. In many other illustrations also colour has been happily employed, so that it is clear that great care has been devoted to this portion of the work. Yet we find that a few illustrations do not show that which they are intended to show. For instance, we may mention Fig. 19, which is stated to illustrate "amputation of the middle finger by lateral flaps," yet this title is immediately followed by the statement that "the neck of the bone should be more fully cleaned, the tendons separated, and the bite of the forceps pressed more securely round the neck of the bone." Surely it would be better to discard an illustration which is considered incorrect and to replace it by one that is properly drawn.

General matters which concern almost all operations, such as the examination and the preparation of the patient, have been placed in a special chapter so as to save space by avoiding needless repetition. Here also we find a helpful section on the treatment of patients after operation. We should be glad to see this extended, for the young surgeon is not unlikely sometimes to find the after-treatment even more difficult than the operation itself, and some of the difficulties that may here present themselves are not mentioned.

In conclusion, we may express the opinion that this edition will be as much appreciated as its predecessors and the hope that it will be followed by many others of this trustworthy guide to operative surgery.

Diarrheal, Inflammatory, Obstructive, and Parasitic Diseases of the Intestinal Tract.

By S. G. GANT, M.D., Professor of Diseases of the Colon, Sigmoid Flexure, Rectum, and Anus at the New York Post-Graduate Medical School and Hospital. Illustrated. London and Philadelphia: W. B. Saunders Company. 1915. Pp. 604. Price 25*s.* net.

THE author has compiled a mass of medical information about diarrhœa, its causes, pathology, and treatment. In his etiological classification he reckons some 139 causes of diarrhœa, and he labours through this long list conscientiously in his long-winded volume.

The first part of the book is occupied with the occurrence of diarrhœa in the course of the infectious fevers and various chronic diseases, intoxications, and conditions of disturbed metabolism. Then follow 300 pages on diarrhœa occurring in enteritis or colitis of different types, and an account of diarrhœa due to obstruction. The last 50 pages give an account of the various surgical procedures for the relief of diarrhœa advocated and practised by the author. There are many excellent photographs illustrating the pathology of enteritis in the book, largely taken from specimens in the Army Medical Museum at Washington; not a few of these photographs have been considerably injured by excessive retouching.

The author is very much at the mercy of the fads and fancies of the American, English, French, and German writers from whom he quotes freely and uncritically. Thus in describing the diarrhœa of old age (p. 170) he commits himself to the following unproven and irrational statements: "The osmotic pressure is controlled in women by the menstrual loss of blood. After this is lost at the menopause the hyperosmotic blood seeks a chance to filter through the tissue offering the least resistance, such as the intestine, and the filtrate is full of toxic material and causes diarrhea." Elsewhere (p. 121) he ascribes diarrhœa in old age to constipation, or to "hypodynamia cordis" (p. 116). He is not always fortunate in his use of terms or the construction of his sentences. Thus on p. 255 he writes: "*Diarrhea* is the pathognomonic symptom of bowel tuberculosis, but occasionally this class of patients suffer from constipation or obstipation, alternating with diarrhea, when the bowel is ulcerated or blocked by a tubercular tumor." It is obvious that there are at least three grave errors of grammar or sense in these few lines. Dr. Gant is no happier in his use of the Latin tongue. Describing the use of filix mas as an anthelminthic on p. 537, he calls it "felix mass," and on p. 538 he prescribes the use "Extracti filicis macis."

We do not want to lay too much stress on comparatively small things. Together with its faults of construction and composition, Dr. Gant's volume contains much interesting reading, and gives a good account of an extensive experience of intestinal surgery and of operations such as appendicostomy, appendicocæcostomy, and enterocæcostomy. The utility of the work would gain enormously by pruning and compression to half its present size.

Applied Immunology: The Practical Application of Sera and Bacterins Prophylactically, Diagnostically, and Therapeutically. With an Appendix on Serum Treatment of Hæmorrhage, Organotherapy, and Chemotherapy.

By B. A. THOMAS, A.M., M.D., Instructor in Surgery in the University of Pennsylvania, &c.; and R. H. IVY, M.D., D.D.S., Assistant Instructor in Surgery in the University of Pennsylvania, &c. London and Philadelphia: J. B. Lippincott Company. Pp. 359. Price 16*s.* net.

THE authors point out in their preface that insufficient attention is paid to what is barbarously called immunology, and that in consequence the general practitioner possesses only that little knowledge of it which is proverbially a dangerous thing. The book before us aims at remedying this state of ignorance.

After an introduction dealing with general principles and the history of this branch of knowledge, the second chapter, of some four pages, is devoted to an enumeration of the different antigens and antibodies, and three pages are given to Ehrlich's theory of side chains. Anaphylaxis receives rather larger space, after which antibacterial and antitoxic sera are dealt with in four chapters covering 28 pages. Agglutinins and the Widal reaction occupy nine pages, precipitins four, and lysins three. Fixation of complement, on the other hand, receives the honour of 66 pages of text. Biochemical reactions, such as the meiostagmin and epiphanin reactions, are briefly dealt with, and the various cutaneous tests have a chapter to themselves. Tuberculin treatment occupies the sixteenth chapter of 18 pages, while phagocytosis is dealt with in the two pages of Chapter XVII., and three pages are devoted to the problem of recovery from bacterial invasion. The last three chapters deal with bacterial inoculation and the opsonic index, while an appendix contains an account of the use of normal serum, of organotherapy (five pages), and of the use of salvarsan, with a glossary of technical terms.

It will be seen that the treatment of the various subjects is very unequal, the authors being apparently most interested in the complement deviation tests and in the administration of salvarsan, and least in serum treatment. The book seems unduly cut up into brief chapters. We have no fault to find with its actual contents, the judgments expressed being usually sane and moderate, but we hardly feel that it possesses such outstanding features as to justify an addition to the existing plethora of books dealing with this subject.

The Clinical Anatomy of the Gastro-intestinal Tract.

By T. WINGATE TODD, M.B., Ch.B. Vict., F.R.C.S. Eng., Henry Willson Payne Professor of Anatomy in the Western Reserve University, Cleveland, Ohio. With 32 figures in the text. London, New York, Bombay, &c.: Longmans, Green, and Co; Manchester: At the University Press. 1915. Pp. 264. Price 6s. net.

THIS book is without any doubt a useful one; it contains a very large number of pieces of information which previously have existed only as scattered items in periodical literature. It is a collection of information rather than a book. One might almost say that material had been gathered here, there, and everywhere; that this material had been arranged in its proper order, but had not been digested and "written up" into its final form. One is reminded of an enthusiastic bird's-nester who takes eggs eagerly from every nest within his reach (and 355 works are quoted in the bibliography) and who arranges them all into a fine collection of bird's eggs, but a collection of eggs needs to be something more than this before it is a contribution to the science of oölogy.

The gathering together of so much undigested material is, to our mind, a point to be criticised. The good and the bad are ranged side by side without a caution to the reader; the well-tried work and the latest fad take equal rank. It is for the teacher to sort out and set in proper focus the gleanings he has made in a wide field of literature; the sorting process cannot be left safely to the student. The author has a great liking for the free use of, what appears to us, altogether unnecessary German words, a protest against the introduction of which is not begot of present conditions.

The book, as we have said, is useful, but Professor Todd could have added to its utility and given a great deal more help to the student by treating his material as the system of which he writes treats the material with which it deals.

A Treatise on Hygiene and Public Health, with Special Reference to the Tropics.

By B. N. GHOSH, L.M.S. Cal. Univ., and J. L. DAS, L.M.S. Cal. Univ. Pp. 410. Illustrated. Price Rs. 4, or 6*s.* net.

THE first edition of this book was reviewed in THE LANCET some two years ago. That there was room for a small manual of hygiene written in the form of a text-book and having special reference to Indian conditions is shown by the fact that a second edition of the book has been called for promptly. Opportunity has been taken in issuing another edition to make useful additions to the text and to the illustrations, while the whole work has been revised and brought up to date.

The application of the principles of hygiene in India is a matter of special difficulty owing to the existence in that country of ancient customs and habits of a kind different from those prevailing in Europe, and on this account it is important that facilities should be provided for the study of the subject from the Indian as well as the general standpoint. The intimate knowledge of Indian conditions possessed by the authors has enabled them to supply a want in this direction. Their treatise on "Hygiene and Public Health," though small in size compared to the vast volumes that are nowadays produced, contains a large amount of necessary information presented in a concise and clearly expressed manner, and we believe that the book will be found useful to medical men and others interested in public health work in tropical climates.

La Vaccination Antityphoïdique: Vaccination Préventive et Vaccinothérapie.

By Dr. H. MÉRY, Professeur Agrégé, Paris Faculty of Medicine. Paris: Baillière et Fils. 1915. Pp. 96. Price 1.50 francs.

Prophylactic vaccination against typhoid fever has now established itself on a sure basis as a most valuable procedure, and we find in this little volume by Dr. Méry a historical résumé of the progress of the discovery and a clear account of the different methods in use in different countries. The author apparently holds that vaccination with attenuated living cultures is most effective, but the method is not so easily practicable as those involving the use of dead cultures. The technique of vaccination, its effects, and its contra-indications are set out in detail. The therapeutic use of vaccines in this disease, on the other hand, is of very doubtful efficacy. Considerably more evidence than that which is at present available will be needed to vindicate such a mode of treatment in an acute bacillæmic disease. Good results are, however, recorded, and further investigation is desirable, as with careful dosage there seems, at all events, little danger of doing harm.

The type employed in this little volume is clear and pleasant to read, the style is lucid, and the statement of the case is impartial. We note that throughout the book, by some printer's error, the name Leishman is habitually spelt Leihsman.

PARAFFINUM LIQUIDUM, B.P.

GENERAL CONSIDERATIONS.

THE steps by which water-white petroleum suitable for medicinal purposes is produced from the crude treacly oil are of interest, and, besides, of therapeutic importance. Essentially serving as an intestinal lubricant, paraffinum liquidum should be refined to a degree of purity consistent with the delicate demands of the human machine. Questions of physical and chemical standards apart, the patient will naturally have a preference for that oil which is colourless and tasteless and of agreeable fluidity. The raw material is none of these things. It is an unattractive-looking brown slimy oil with a slight green fluorescence and a smell suggesting the atmosphere of the engine-room, and a taste more or less predicted by its smell. The crude oil contains a number of impurities, and it is the refiner's aim to eliminate these. When the oil is required for the lubrication of machinery the process need not be pushed to extremes. A water-white oil would be an extravagant and luxurious thing to put upon an axle-bearing, but when it is intended for the lubrication of the human machine the refining process cannot be advanced too far. When, however, purity, brightness, and colourlessness are reached, the chemical and physical properties come into consideration.

PARAFFINUM LIQUIDUM ACCORDING TO THE PHARMACOPŒIA.

The British Pharmacopœia, 1914, sets out the following characters and tests of paraffinum liquidum: Transparent, colourless, not fluorescent. No odour or taste. Specific gravity 0·860 to 0·890. A mixture of 4 millilitres of liquid paraffin and 2 millilitres of *absolute alcohol* and 2 drops of clear saturated solution of *lead oxide* in solution of sodium hydroxide remains colourless when kept at 70° for ten minutes (absence of sulphur compounds). When 3 millilitres are heated with an equal volume of sulphuric acid in a test-tube placed in boiling *water* for ten minutes and frequently shaken, the acid layer after separation is not darker than pale brown. Ten millilitres of *alcohol* (90 per cent.) boiled with 5 millilitres of liquid paraffin are not acid to *litmus*."

It is noteworthy that two of these tests—namely, treatment with sulphuric acid and with alkali—are identical with two steps in the refining process, so that if these tests give positive results the meaning is that the sulphuric acid and alkali purification process has either been omitted or inefficiently carried out. Strictly speaking, paraffin means a saturated hydrocarbon containing, that is, a maximum of hydrogen, the first of the series (C_nH_{2n+2}) being methane itself CH_4. The unsaturated hydrocarbons—e.g., the olefines—are removed, amongst other things, by acid treatment. The requirements of the Pharmacopœia would thus appear to mean that for the purposes of a human lubricant preference should be given to saturated hydrocarbons or hydrocarbons of the true paraffin series. These, of course, are inert, and with difficulty acted upon by any reagents, and are not likely, therefore, to produce any unfavourable disturbance in the human system.

It seems desirable, therefore, that the oil used for laxative or lubricant purposes should be a pure saturated hydrocarbon free from members of other series. The oils which best answer this requirement are those obtained by a series of refining processes from crude Russian petroleum.

THE REFINEMENT OF THE CRUDE OIL.

By the courtesy of the Silvertown Lubricants Limited our consulting chemist was permitted to see these refining processes being carried out on a large scale at their works at West Silvertown. Before the war the supplies of medicinal oil were chiefly obtained from German refiners, who procured the crude oil from Russian sources. The refining process has now been adopted on an important scale in this country, and the product is not less satisfactory. This British enterprise is worthy of support, and there is now and in the future no reason to be dependent upon foreign supplies of the refined product answering in all respects the special requirements for medicinal use. The Silvertown Company, in particular, are manufacturing a fine standard product which answers all the B.P. demands perfectly, as will be seen from the following results of tests made on two samples:—

Analysis of Two Typical Samples of Paraffinum Liquidum, B.P.

	No. 1.		No. 2.
Specific gravity at 60° F. ...	0·876	.....	0 884
,, ,, ,, 100° F. ...	0·866	.....	0 872
Viscosity ,, 100° F. ...	180	.....	281
Appearance	Colourless.	.....	Colourless.
Odour	Imperceptible.	.....	Imperceptible.
Fluorescence	None.	.....	None.
Sulphur compounds	None.	.....	None.
Unsaturated hydrocarbons...	None.	.....	None.
Reaction	Neutral.	.....	Neutral.

There is an interesting sequence of events in the evolution of these pure refined products from the crude oil. Reduced to simple terms the refining operations are primarily directed to separating the unsaturated hydrocarbons (e.g., olefines) together with other impurities from the true paraffin oils or saturated hydrocarbons. Distillation is the first step, and the fraction containing the lubricating oils is treated with sulphuric acid. This eliminates the unsaturated hydrocarbons. Much char or tar is produced, and there is considerable disengagement of sulphur dioxide gas. The acid-treated oil, which now has a slight cherry colour, is next thoroughly washed with alkali, which removes all acid. At this stage the oil has a somewhat milky appearance. It is next washed with water, which reduces it to a clear pale yellow oil. The nature of the reaction is unquestionably complex, but it is probable that the hydrocarbons largely present in Russian petroleum are transformed by the action of the acid, a portion of the molecule being removed and the remainders associated. The final process is a series of filtrations, the ultimate product being colourless, bright, with practically no odour or taste, and perfectly neutral as regards either the presence of acid or alkali. The result, in short, is paraffinum liquidum, B.P., a pure medicinal product—refined at a British refinery.

A REVIEW OF THE PHARMACOPŒIA REQUIREMENTS.

According to our experience many of the samples of oil purchased on the market do not strictly comply with the British Pharmacopœia requirements and few of them are sold labelled B.P. In a future issue we shall publish the results of an inquiry, which is just completed, into the character and quality of the paraffinum liquidum sold in the market for laxative purposes. Having regard to the

popularity of this method of treating intestinal stasis, the investigation is clearly of considerable interest. It is somewhat remarkable that while in general the requirements of the Pharmacopœia may be accepted, an important omission occurs in one respect for paraffin; while limits of density or specific gravity are laid down, nothing is said about the fluidity or viscosity of the oil. This is probably more important than specific gravity, since the rate of flow of the oil must materially influence its lubricating effects, while specific gravity does not necessarily bear a relation to viscosity, except perhaps in products from the same oilfields. To use an analogy, petrol is a hydrocarbon which in the carburettor and internal combustion engine is the source of motive power, but it is no use whatever in the gear-box, and it is in reality the gear-box, so to speak, of the human machine in which a lubricant is needed. Lubricating oils at one time were judged solely with reference to specific gravity, but experience having shown that the density is not necessarily an index of lubricating value, it is now generally recognised that specific gravity is of less importance than viscosity.

Since it is admitted that the value of liquid paraffin taken internally is chiefly that of a lubricant on the contents of the bowel (although incidentally it may also restrict bacterial activities), the viscosity of the oil is probably a more important factor than its specific gravity. With so many new oilfields accruing every day the valuation by specific gravity may be misleading, for there are oils of 0·880 specific gravity which are less viscous and are poorer lubricants than many oils of 0·850 to 0·860 specific gravity. It seems pretty safe to say that the effects would be quite different when on the one hand a rapidly flowing oil is used, and on the other an oil travelling slowly through the digestive tract. Yet we have examined samples of paraffinum liquidum sold to the public for laxative purposes which have shown very wide differences in regard to viscosity. A given volume of one specimen, for example, at 100° F. was found to occupy 296 seconds in flowing completely out of a vessel, while the same volume of another oil was delivered in 71 seconds. It seems very improbable that these two oils would give precisely similar therapeutic effects, and yet in other respects both fall into line with the requirements of the Pharmacopœia. A practical investigation is needed upon this point. From a few experiments which we have made it seems desirable to employ an oil showing a viscosity of not below 105 at 100° F.; this figure meaning that in a Redwood viscometer 50 cubic centimetres of oil takes at least 105 seconds to flow out. Oils which flow more rapidly than this are less likely to produce that steadiness of lubrication which is physiologically desirable; they frequently produce intestinal pain, and they may even escape without lubricating at all. Possibly, also, the disturbing effects on digestion which sometimes occurs is due to the employment of an oil of too easy fluidity. It must be remembered, again, that viscosity is affected much more by temperature than is specific gravity. Thus, an oil of a viscosity of 762 seconds at 70° F. showed a viscosity of 281 seconds at 100°, while at 140° the viscosity figure fell to 110. The same oil showed a specific gravity of 0·884 at 60° F. and 0·872 at 100°, a difference only of 0·012. It is well to point out that all physical constants should be taken at body temperature and not at the usual standard of 60° F.

In regard to further tests, it appears desirable that the oil should be free from sulphur compounds, the presence of which is indicated by the alkaline lead test of the Pharmacopœia, while any immediate considerable darkening shown on warming with sulphuric acid points to the presence of olefines, or non-saturated hydrocarbons, which, as has already been pointed out, are less suitably adapted for medicinal use. The test should not be made with an acid containing more than 95 per cent. H_2SO_4, otherwise it is too severe, although we have examined oils which hardly discolour at all with the full strength acid. When a slight reaction to hot acid is observed it is due to the difficulty of transforming the last traces of reacting hydrocarbons. These are only slowly acted upon in any case, and near the end of the refinement process are protected by the mass action of the preponderating stable product. In fact, as far as possible, the oil should be chemically inert, which for medicinal purposes is an important quality of the true paraffin or saturated hydrocarbon. It is probable that such an oil is completely expelled by way of the bowel, but any impurities may be absorbed with possible disadvantages to the patient.

Lastly, the Pharmacopœia requires the oil to be "not fluorescent." While it does not appear why such a demand is made, it is quite obvious that a pure medicinal paraffin can be readily prepared which is practically free from this property. It is interesting to ask what fluorescence connotes which makes it an objectionable feature or has warranted the Pharmacopœia to rule fluorescent oils out. Fluorescence is, of course, due to some substance not necessarily a saturated hydrocarbon. At all events, fluorescent oils in our experience do not show the same stability as non-fluorescent oils, since on exposure to air or light these quinine-looking oils turn yellow. It may be concluded, therefore, that fluorescence means the presence of unstable bodies, which are accordingly undesirable in medicinal paraffinum liquidum. There can be nothing more stable than a pure saturated hydrocarbon, and, if we are not mistaken, it is this remarkable stability which renders the petroleum laxative treatment valuable and innocent. The Pharmacopœia, therefore, rightly insists upon the exclusion of a liquid paraffin which contains unstable constituents, amongst which are fluorescent bodies, unsaturated hydrocarbons, and sulphur compounds. As both fluorescence and colour are obscured in coloured bottles it seems desirable that paraffinum liquidum should be sold in water-white glass bottles.

Later we propose publishing the results of the examination of a number of samples of oil procured in the open market, and so far it appears that there are considerable variations in the characteristics and quality of the oils supplied, and that it cannot be said that this therapeutic agent has received adequate attention in regard to standardisation.

THE SHORTAGE OF MEDICAL MEN.—At a recent inquest held on the body of a child who died at Batley from convulsions due to chronic tuberculous meningitis, a medical witness stated that the child had been under the care of a nurse who went round giving advice. There was a shortage of medical men in the town, and the mother had placed more confidence in the visits of the nurse than she ought to have done. It was not suggested that proper medical treatment would have saved the life of the child.

THE LANCET.

LONDON: SATURDAY, OCTOBER 2, 1915.

The Return to Duty.

In times of peace all employers of labour are frequently concerned to know the probable duration of absence caused by sickness. They often require a medical certificate to state clearly the nature of the illness which is temporarily depriving them of the service of an employee, and they may desire some additional guidance which will enable them to make adequate provision for filling the gap. This guidance should, when possible, forecast the probable time that must elapse before the employee can be expected to resume his work. The data upon which such certificates can be based have hitherto been of an extremely vague character. Text-books afford very little guidance about such time-limits, though there may be many generalities connected with prognosis. Practitioners called upon to supply information have generally had to draw largely upon their individual experience, and it is considered that they are sometimes, perhaps often, actuated by kindly considerations in recommending leave of absence which may not involve the chance of finding the vacancy filled up permanently. One of the unforeseen results of the war has been that it has permitted the collection of some facts and figures which in future may throw some light on this difficult question. They apply mainly to the New Army, a body of presumably healthy young adults, specially selected for physical fitness and therefore comparable to the large class of young men employed in Government offices and public institutions where a medical examination is a necessary prelude to engagement. There are, of course, obvious differences in the conditions of work, such as the amount of physical labour and the open-air life, which must render it unwise to assume that the figures supplied by the New Army will be closely applicable to other classes of young men in times of peace, who are leading sedentary lives and occupied in mental work, frequently of a routine nature. Still, though the conditions of life are in every respect different, the accidents and diseases of the New Army are probably affecting individuals who to a large extent have been drawn from this sedentary class.

Tables of statistics are not usually attractive. Appearances are against them. An array of figures in parallel columns, although it indicates law and order, is apt to provoke distaste and to excite ribald remarks about proving anything in creation by judicious manipulation of data. Yet statistics have distinct value and may frequently yield interesting results, which may not have been foreseen by the compiler. The first essential in studying such tables is to form an accurate conception of the principles upon which the data have been selected. It is important to note not merely the information presented, but also the omissions, and it may be worth while speculating on the reasons for these omissions. We publish this week an attempt to determine the duration of treatment required in over 1500 cases which were treated in certain auxiliary hospitals attached to the Connaught Hospital at Aldershot. The author, Dr. JAMES RAE, the registrar and secretary to the hospital, hopes he has supplied some material for gauging the average period of prudent convalescence for many accidents and ailments, and his figures will, we believe, repay careful study. He draws few conclusions and makes but few comments, and from the way in which the tables have been constructed it is obvious that he has approached the subject without any personal bias. Considering the variety of the conditions included in these tables it is distinctly cheering to learn that at an average cost of about £4 per man it has been possible in some 28 days to render each individual fit to return to duty. It will be noted that the author states that the 1556 cases analysed represent less than 15 per cent. of the patients admitted to the Connaught Hospital during a period of six months, and that they do not include any who died, any who were discharged as medically unfit for military service, or any about whose diagnosis there was doubt. We are certainly not intended to deduce that these omissions would account for over 85 per cent. of the admissions. Nor that the exclusion, mentioned later, of specific fevers, epilepsy, organic heart disease, malignant disease, and tuberculosis of lungs, bones, and joints would account in figures for the missing 85 per cent. In all probability the 85 per cent. was largely composed of admissions of patients with accidents or maladies too trivial in their nature to warrant removal to one of the auxiliary hospitals, or, indeed, to necessitate retention for more than a few days. It is conceivable that, for example, a fairly large number of men might have been admitted for the mild reaction which so often follows after protective inoculation against the risk of enteric fever; and that men from distant camps might have been sent to hospital for a short period to have their teeth attended to, or their vision tested. In some such way it would, we believe, be possible to account for the large percentage omitted from these statistical tables, without assuming an enormous proportion of deaths, or of rejections from military service.

The tables present many features which will cause some surprise, even though we bear in mind that they refer to males of a picked class exposed to severe changes of weather and to great physical strain. The number of the men of the New Army treated for hernia, hæmorrhoids, and varicose veins appears to indicate either some laxity in the

original examination on enlistment, or, we prefer to think, some very commendable readiness on the part of each individual concerned to endure the present pain of operation in the desire to be rendered fit to bear a share of the fighting. It is somewhat significant that there was only 1 case of gastritis out of 44 men of the Expeditionary Force who came under treatment, while there were 52 cases out of 670 men of the New Army. Medical statisticians will probably urge that the conditions of the compilation of Dr. RAE'S tables will scarcely warrant their application to similar circumstances in time of peace, and that in particular the data in Table F, on medical cases from the Expeditionary Force, are drawn from such small numbers that they are almost negligible. Still, the tables represent a serious attempt to throw light upon a subject that has hitherto been much overlooked, and we believe that similar investigations may be undertaken with advantage.

District Nursing in Measles and Whooping-Cough.

THE objects of the Central Council for District Nursing in London are to systematise the arrangements for district nursing throughout the County of London, and to promote the adequacy and efficiency of such nursing. The council has for chairman Sir W. J. COLLINS, and the vice-chairman is Dr. CHRISTOPHER ADDISON, M.P. There is a strong executive committee, with Sir A. H. DOWNES, of the Local Government Board, as chairman. The district nurses in London undoubtedly serve a useful purpose, and their work as nurses amongst the poor gains enormously by the coördination of effort, and the formation of the Central Council was a wise and valuable procedure. A proof of this is forthcoming in a report that we have received from the executive committee on district nursing in relation to measles, German measles, and whooping-cough, three diseases where nursing is particularly desirable and concerning which the public attitude is far too apathetic. The need of nursing for cases of these diseases when occurring in poor homes is not sufficiently realised.

The report, which was presented to a meeting of the Central Council, shows that the care of patients suffering from infectious diseases which have to be notified is assured, but children who contract measles, German measles, and whooping-cough, affections which are not notifiable unless by special application to a borough, are left to be looked after by their friends. There is a tendency amongst the general population, especially the working classes, to regard these diseases as trivial in character and as necessary evils. Many people are still imbued with the idea that every child must "catch" measles and whooping-cough, and that the sooner the attack is over the better; consequently very little, if any, precaution is taken against infection. That this idea is false goes without saying. A glance at the mortality tables will show that whooping-cough and measles stand high in the list of causes of death in children from infectious diseases. Further, it is known that it is not these diseases in themselves that prove dangerous, but the complications which may ensue, and that such complications are due to neglect in the management of the children and can be largely avoided by proper care and attention. In whooping-cough and measles the most frequent and fatal complications are connected with the lungs and with due precautions can usually be prevented. The executive committee of the Central Council for District Nursing in London have consulted well-known authorities as to the manner in which the two diseases are spread and the best measures to be adopted in the interests of the patients. It is rightly pointed out in the report that the mortality from measles and whooping-cough increases in proportion to over-crowding and poverty, and that in order to remedy this evil there must be efforts made to secure the isolation of young families, and to procure that assiduous care which is essential if the lives of the children are to be saved. Here the assistance of the district nursing organisations must prove extremely valuable. We agree with the executive committee that hospital treatment for the majority of cases of measles or whooping-cough will probably never be practicable, even if it were desirable; it should be reserved only for the most urgent and necessitous cases. Too often at present skilled advice and treatment are not sought until complications have arisen, and it appears from the evidence published in the report on the recent inquiries into a series of cases that in over 50 per cent. of the cases no medical man had been called in, the children being simply under the care of their parents or friends.

The district nursing associations of London, by their experience and organisation, are especially qualified to assist the sanitary authorities in the supervision of patients treated at home. It appears that until recently there have been some differences of practice among these associations as to the attendance of their nurses upon measles and other infectious diseases. Some associations forbid their nurses to attend such cases except by special permission, and difficulties have in consequence arisen. The committee sought the advice of Dr. FOORD CAIGER, whose experience entitles him to speak with authority, and we believe his opinion will be generally endorsed. It is that there is no reason why district nurses should not deal with cases of measles or whooping-cough in the ordinary course of their duties if they are reasonably careful in taking precautions against infection. We feel that, given suitable training and special instruction, district nurses, acting as they do under rule and supervision, may safely be trusted to undertake the nursing of these diseases in the course of their ordinary work. They would be able to teach the mothers how to look after the children when suffering from these diseases—for instance,

how to take precautions against chill, whilst at the same time providing proper ventilation. Further, the nurses would be instructed how to recognise the indications of the onset of complications, and thus the provision of adequate medical attention would be insured. In periods of epidemics it might be necessary to detail one or more nurses in a district for the special work. Little is said in the report about German measles, which rarely presents complications and is therefore not attended with the same risks. The report is a valuable one, and the recommendations and suggestions contained therein should assume practical form.

Annotations.

"Ne quid nimis."

FATIGUE.

A NEW and cheap translation of the late Professor Mosso's well-known book [1] on fatigue has just been issued, in which the famous savant records his experiments designed to explain the laws which govern exhaustion, both physical and mental. Popular in its address, the examples employed in the book are simple and sometimes very striking. Alluding, for instance, to the rate at which stimuli are propagated, he remarks that if the statue of Liberty in New York Harbour were to come to miraculous life the practical Americans could make no use of her even as a guardian of the port, so slow would she be both to feel and move. "As she is 138 feet in height, if she had nerves and a spinal cord like ours, one would have to wait about four seconds after touching her foot before she would give any sign of sensation and begin to move." Dealing with fatigue in industrial work, Professor Mosso deplores the fact "that the iron necessity of keeping machines at work during night as well as the day causes exhaustion and deterioration in the nature of man," while intellectual fatigue he finds to be no less pernicious in its effects. A complete knowledge of the nature and cause of physiological fatigue would imply a more perfect understanding of the working of the human machine than we have yet arrived at; a consideration of the results produced in materials by strain and of the factors which make for the stability of mechanical structures is helpful, but only to a certain degree. In appointing a committee to consider and advise on questions of industrial fatigue in regard to munition workers the Government have taken a step which we hope is an indication that science will have in the future an intimate share in assisting the legislature to frame laws for the regulation of work. It is of vital interest to the nation, and, indeed, to the cause of the Allies, that the manufacture of munitions shall be carried on economically in regard to bodily expenditure—this economy is as valuable as any money-saving. It is certain that among the most difficult problems in connexion with labour is the exact value and proper limitations of over-time work, a practical side of the value of estimating the production and effects of industrial fatigue which is rather without the scope of Professor Mosso's treatise. An extremely interesting report has just been issued from the Home Office,[2] being the results of a physiological investigation undertaken for the department by Dr. A. F. Stanley Kent into the subject of industrial fatigue. The trades which were chosen as the particular subject of the inquiry were three—the chemical trade, the printing trade, and the collieries. These three trades differ so largely in the manner in which they might be expected to evoke fatigue in the operatives, that any law which can be found to hold good in all of them may be supposed to be general in their application. The work is to be regarded as preliminary and is published now in order that others, interested in the subject, may be informed of the progress made and of the relative value to be placed on the methods described.

EPSOM SALTS AND SUGAR IN LEATHER.

IT would be thought that the least desirable materials to give weight to leather would be soluble substances, for the moment such leather is exposed to wet weather these substances would dissolve and weaken the tough and waterproof qualities of the material. We do not know whether the weighting of leather with soluble compounds is practised to any extent in this country. We imagine not, but this clearly occurs in the United States. According to Bulletin No. 165, issued by the Bureau of Chemistry of the Department of Agriculture, the weighting materials in most general use are glucose and Epsom salts. Tanners state that leather is loaded with foreign materials because the boot and shoe makers will buy only the lower-priced leather which, to use a trade expression, "cuts to advantage"—that is, a leather from which the greatest number of soles can be cut at the lowest cost a pair. Approximately 63 per cent. of the leathers examined were weighted with glucose or Epsom salts, or both. This loading varies from 1 to 7·5 with an average of 3 per cent. of Epsom salts, and up to 10·4 with an average of 5·5 per cent. of glucose, amounting to a total maximum loading, when both are present, of 16 per cent. and an average of 8 per cent. The loading process often makes the leather hard, brittle, and liable to crack, and when the soluble loading washes out the leather is more easily penetrated by water. In short, this weighting trick tends to destroy those very essential properties of leather for which it is trusted. Our boots and shoes, while supple and yielding, should be waterproof. The menace to the health and comfort of the wearer of loaded leather is obvious and the practice is most reprehensible. Imagine such leather in the trenches, while its use in any circumstances is full of risk to the soldier's well-being. We have heard of brown paper being sandwiched into the leather layers of the sole of a boot, but not before of the use of Epsom salts and sugar. Those in charge of our military contracts will be advised to take note of this new attack of the adulterator.

[1] Fatigue. By A. Mosso, Professor of Physiology in the University of Turin. Translated by Margaret Drummond, M.A., and W. B. Drummond, M.B., C.M., F.R.C.P. Edin. London: George Allen and Unwin; New York: G. P. Putnam's Sons. 1915. Pp. 334. Price 2s. 6d. net.

[2] Interim Report on an Investigation of Industrial Fatigue by Physiological Methods. By A. F. Stanley Kent, M.A., D.Sc. (Oxon.), Henry Overton Wills Professor of Physiology in the University of Bristol. Wyman and Sons, Limited, 29, Bream's-buildings, Fetter-lane, E.C. 1915. Price 4½d.

AFRICAN COAST FEVER.

MODERN tropical medicine concerns itself not only with the diseases of man but also with those of animals, the same scientific principles being equally applicable to both. The maladies caused among domestic stock by biting insects have had a considerable share in retarding the economic development of some of our tropical possessions. The disease known as African, or East African, coast fever is an example in point. In the past this affection of cattle has caused enormous losses to the settlers in Rhodesia, who have been losing until recently sometimes 95 per cent. of their stock, no curative remedies having been found of any use for the complaint. The subject has lately been under investigation, and Mr. Ll. E. W. Bevan, M.R.C.V.S., Government veterinary bacteriologist, has made a report which has been issued in pamphlet form by the Department of Agriculture, Rhodesia, giving information and advice as to the cause and prevention of the disease. African coast fever, it appears, is a malady limited to bovines, and it is curious that while it ravages the cattle of European settlers, it does comparatively little damage to the stock belonging to the natives. The cause of the complaint is a parasite, Theileria parva (known otherwise as Piroplasma theileria), which undergoes development partly in the tick which is the transmitting agent of the virus, and partly in the ox. Sexual multiplication of the parasite takes place in the insect and gives rise to spore-like bodies which the tick inoculates into the bovine animal at the time of biting. It seems that although numerous parasites may be present in the blood of the ox, the infection cannot be artificially transmitted by inoculation apart from the tick; for in the ox's blood only the non-sexual forms of the parasite are present and these are incapable of undergoing further development in the bovine animal. The agency of the insect is therefore essential for the spread of the disease. The species of tick which is most commonly the vector of the virus in Rhodesia is the brown tick, Rhipicephalus appendiculatus, but other varieties, such as the red-legged tick, the black-pitted tick, or the Cape tick, can also transmit the disease. Though the tick can attach itself to other domestic stock, these do not develop the malady, but they afford nourishment to the insects, in this way harbouring them and affording means for conveying them to other localities. For the prevention of African coast fever Mr. Bevan recommends systematic, short-interval dipping—that is, the immersion at short intervals of cattle and other domestic animals in a solution destructive to the ticks, such as one consisting of soft-soap, paraffin, arsenite of soda (80 per cent. arsenic), and water. Stray cattle, travelling oxen, and all cattle newly arrived on a farm are the principal sources of the danger of introducing the infection, and should therefore be strictly isolated for a time, during which period they should be systematically dipped or sprayed before being allowed to come in contact with the other animals on the farm. Mr. Bevan emphatically states that the stockowner who systematically dips his cattle in the manner above indicated has little to fear from African coast fever, and if the principle which he has explained were thoroughly adopted throughout Rhodesia this fever, as well as other equally serious diseases of stock, would soon cease to exist.

NERVOUS INJURIES DUE TO SHELL EXPLOSIONS.

IN previous articles in THE LANCET of March 27th (p. 663) and August 14th (p. 348) we have discussed some of the numerous cases in which shell explosions have produced grave nervous symptoms, and the question arose whether these were hysterical or due to organic lesions. We referred to the view, emphasised by M. Paul Ravaut at the Académie de Médecine of Paris, that the "wind of the explosion" may produce nervous injuries. He brought forward a case in which paraplegia without external wound followed an explosion and lumbar puncture yielded bloody cerebro-spinal fluid, and other cases in which it yielded fluid containing an increased quantity of albumin. At a meeting of the Société Médicale des Hôpitaux of Paris on July 30th M. Henri Claude, M. J. Lhermitte, and Mlle. Loyez reported a much more striking case which shows that the spinal concussion due to a shell explosion may cause a grave lesion of the cord without any damage to the vertebral column. A soldier, aged 23 years, was wounded on March 27th, 1915, and taken to the "centre neurologique" at Bourges on April 17th. There were wounds due to shell explosions in the chest, left shoulder, and thighs. There was also complete flaccid paraplegia, though spontaneous involuntary movements of the legs occurred. There was complete anæsthesia as high as the distribution of the fifth dorsal nerve; the area of the fourth dorsal was hyperæsthetic. He complained of violent paroxysmal pains, tingling, and paræsthesia in the legs. He had no sensation of micturition or defæcation. The tendon and superficial reflexes in the lower limbs were abolished, and also the abdominal and cremasteric. There was complete retention of urine. Enormous sacral and trochanteric bedsores were present. He succumbed on May 6th to an attack of generalised erysipelas. At the necropsy the spinal column and meninges were found absolutely intact, and there was neither hæmorrhage into the canal nor compression of the cord. Transverse sections of the cord revealed softening, which occupied the internal part of the fourth and fifth dorsal segments, while the periphery seemed intact. Microscopic examination showed that the lesion occupied the greater part of the grey matter and encroached on the lateral and posterior columns. There were numerous granulo-fatty bodies, newly formed vessels, proliferation of neuroglia, and secondary degenerations of the white columns.

DIPHTHERIA AND HOFMANN'S BACILLUS.

THE pseudo-diphtheria bacillus discovered by Hofmann in 1888 still occupies an uncertain position with regard to true diphtheria and to other inflammatory conditions of the throat and nose. By some bacteriologists it is regarded as an atoxic non-virulent modification of Löffler's B. diphtheriæ, by others it is believed to be a quite distinct organism, a saprophyte and not a pathogenic parasite. Dr. M. van Riemsdijk[1] holds strongly to the latter view. She believes that any person infected with or carrying the diphtheria bacillus should be treated as a case of diphtheria; apart from diphtheria patients who have recovered, diphtheria carriers occur most freely among those brought into close contact with cases of diphtheria, and are a constant source of danger to others. The bacilli of true diphtheria inhabit the throat for choice, and not the nose; pseudo-diphtheria bacilli, contrariwise,

[1] Nederl. Tijdsch. voor Geneeskunde, Amsterdam, 1915, ii., p. 1252.

are oftenest found in the nose, and comparatively rarely in the throat. She finds that carriers of pseudo-diphtheria bacilli occur with equal frequency—about half the cases—among those who have been brought into contact with diphtheria patients and those who have not. Other investigators have found Hofmann's bacillus present in the nasal mucus of as many as 71 per cent. of the dwellers in large towns. There is no connexion or parallelism between the number of diphtheria carriers and that of the carriers of Hofmann's bacillus; if a diphtheria patient is infected also with Hofmann's bacillus the prognosis is unaltered. Dr. van Riemsdijk remarks that fairly close contact with a diphtheria patient is required to make new diphtheria patients or carriers, so that school children do not readily pick up the diphtheria bacillus from one another, while mothers, nurses, and other members of the family do. In the case of Hofmann's bacillus, on the other hand, transmission of the infection is much more readily brought about. She is convinced that Hofmann's bacillus is a true saprophyte and never gives rise to cases of true diphtheria.

THE PREVALENCE OF CANCER IN NORWAY.

THE question of the increase in cancer is being raised in Norway, and the social and humanitarian aspects of the matter have recently been discussed by Dr. Soegaard.[1] He has travelled through England and the chief countries of Europe to see what is being done by private or public initiative to ease the lot of the cancer patient, and publishes the results of his observations in an illustrated pamphlet of 80 pages. The first cancer hospital, he says, was opened in 1740 at Rheims, founded by a legacy from Jean Godinot; he gives descriptions of other well-known institutions such as those of the Middlesex Hospital and the Cancer Hospital in London, the Samariterhaus in Heidelberg, the Hôpital St. Michel and others in Paris, specially devoted to the treatment of cancer. Details of the chief institutions for cancer research are also given. The pamphlet is written for medical men and the public to read, in the hope that it will loosen the strings of private generosity and the public purse.

ACUTE TORSION OF THE NORMAL OVARY.

IN patients with ill-defined symptoms referred to the lower abdomen, it not infrequently happens that the diagnosis of acute appendicitis is made by exclusion of other diseases, and in cases where it is thought that pathological conditions such as stone in the kidney and ureter, intestinal colic, and salpingitis are not present, an operation for appendicitis may be undertaken with a very reasonable chance of relieving symptoms and saving the patient. It is quite well recognised that an ovarian cyst which undergoes acute torsion may produce symptoms closely simulating appendicitis, but in such cases a well-defined tumour of some size is present. The case recorded by Mr. F. J. F. Barrington in the *Journal of Obstetrics and Gynæcology* for March–May, 1915, is therefore of both pathological and clinical interest. The patient was delivered by Cæsarean section of her twelth child seven weeks before the commencement of symptoms. She was admitted to hospital with the history that at 9.30 P.M. the day before, when walking upstairs, she had been seized with sudden abdominal pain, which gradually became localised in the right iliac fossa. Diarrhœa immediately set in and continued till the following noon. Vomiting commenced about the same time as the diarrhœa and continued three hours longer. There was no vaginal hæmorrhage. When seen the pulse was 76 and the temperature normal. The abdomen moved well and there was little distension, but on pressure in the right iliac region there was marked tenderness. Per rectum a mass could be felt high up in the pouch of Douglas. Twenty hours after the first onset of symptoms a muscle-splitting appendectomy incision was made. Excess of clear fluid was found in the peritoneal cavity, the appendix was quite normal, but the right ovary and distal part of the tube were twisted one complete turn on their pedicle. The ovary was removed. It was uniformly dark purple in colour from effused blood and measured $6\frac{1}{2} \times 3\frac{1}{2} \times 3$ cm. It was not cystic. The patient made an uninterrupted recovery.

ACUTE TUBERCULOUS INFLAMMATION OF THE ILEO-COLIC GLANDS SIMULATING APPENDICITIS.

IN the *Boston Medical and Surgical Journal* of August 26th Dr. Homer Gage has drawn attention to a condition which has received little notice in systematic works and is of considerable interest because it simulates appendicitis and is amenable to operative treatment. It was only after the right iliac region became the most operated on part of the body that the existence of infection of the glands in the ileo-cæcal angle without evidence of tuberculosis elsewhere became recognised. In cases of acute appendicitis moderate enlargement of these glands is occasionally found, but there is only simple inflammation. The tuberculous glands are often found without apparent disease of the cæcum or appendix. One of the earliest cases was reported to the American Surgical Association in 1900 by the late Dr. Maurice Richardson. In an operation on a boy, aged 5 years, for supposed acute appendicitis, he found "a healthy cæcum and an unaffected appendix, but in the mesentery of the ileo-cæcal coil numerous enlarged glands, varying in size from that of an English walnut to that of a pea." Two of them had cheesy contents and all were pronounced tuberculous by Dr. Mallory. Commenting on the case, Dr. Richardson said that tuberculosis limited to a single small area of peritoneum or of peritoneum-covered viscera was unusual and limited to an area that permitted of complete extirpation was still more unusual. In a discussion at the New Hampshire Medical Club in 1913 Dr. David W. Parker stated that he had collected reports of 39 cases, chiefly English and German, to which he added two observed by himself. Dr. Gage now adds from his own experience 11 cases of acute and one case of chronic tuberculous adenitis limited to the ileo-cæcal angle, a fact which seems to show that the condition may be more common than its meagre literature suggests. What is the source of infection, and why does it occur so often in this locality? The cæcum and appendix are drained by these glands. Mr. E. M. Corner has pointed out that as stasis of the intestinal contents occurs in the cæcum, the consequent multiplication of microbes there is a factor in the production of appendicitis. Tuberculosis of the cæcum has been recognised in recent years as not uncommon. It is possible that a primary tuberculous lesion of the cæcum may

[1] Samfundet og de Kraeftsyke (Society and Cancer Patients), by M. Soegaard. Bergen, 1915, J. Grieg's Printing Company.

give rise to tuberculosis of the corresponding glands and then heal spontaneously, or that tubercle bacilli may pass through the intact mucous membrane and produce glandular tuberculosis. This view is supported by the analogy of cervical lymphadenitis. In its numerous lymphatic follicles the appendix resembles the tonsil, and bacilli are supposed to pass through this to produce lymphadenitis. Turning to the clinical aspect, in four of Dr. Gage's cases the age varied from 7 to 12 years and in seven from 16 to 25. In none was there any palpable tumour, and in all but one the affected glands were confined to the ileo-cæcal region. In the exceptional case there were a few small glands palpable in the other parts of the mesentery. The predominant feature was an attack of pain and tenderness localised in the right iliac region with slight pyrexia. Nausea was present in almost all, but vomiting occurred only in four. In one case there was a history of two previous attacks of appendicitis. In another an attack of right iliac pain and vomiting occurred eight months before, when six similar attacks followed. On operation two caseous glands were found in the ileo-cæcal angle. In smears tubercle bacilli were easily demonstrable. The appendix was normal even on microscopic examination. In another case the appendix had previously been removed for the relief of the same symptoms, and more or less pain in the right side of the abdomen had persisted ever since the operation. Three glands of the size of walnuts were found in the ileo-cæcal angle. In none of the cases was there any history, personal or family, of tuberculosis, excepting in two or three cases in collateral branches. The diagnosis from appendicitis is very difficult. Indeed, Dr. Gage never opened the abdomen without expecting to find appendicitis. Fortunately, the differentiation is of no importance, as operation is necessary and the appendix should be removed as well as the glands. The dissection of the glands should, if possible, be accomplished without rupture and without interfering more than is necessary with the vessels of the mesentery. The prognosis after operation is good; there appears to be no tendency to recurrence of the disease.

THE DIAGNOSIS OF LATENT MALARIA.

AN interesting and lucid communication on this subject has just appeared in the July and August numbers of *Il Morgagni* from the pen of Dr. Ignazio di Pace, of the Institute of Agrarian Bacteriology at Portici. A malarious patient usually considers himself cured when he no longer suffers from fever and appears in good health. That this criterion is erroneous is shown by the relapses that occur in those presumably cured, by the high mortality of pneumonia, hepatic cirrhosis, and other diseases aggravated by malaria which is no longer manifest, by splenic enlargement, nephritis, periodic neuralgia, cutaneous eruptions, intermittent hæmorrhages, gastric catarrh, and anæmia due to malaria of which there are no definite signs. A negative result from examination of the blood does not authorise the assumption that the malarial infection is extinct in the organism, for it may remain latent and the sporidium still be present in some morphological equivalent hitherto unknown, and able to give clinical evidence of infection or to reappear as soon as new conditions disturb the physiological balance, such as traumatism, surgical intervention, climate, or any cause that diminishes the organic resistance. Moreover, this may happen after 2, 10, or even 15 years. Many diagnostic methods have been tried by the author and found unsatisfactory, such as urobilinuria, hæmolysins in the urine, deviation of the complement in the serum, and the administration of hydrochlorate of berberine. He therefore instituted a series of observations with reference to the use of strychnine as a means of revealing the presence of latent malaria. The subjects of his observations were 136, chosen from peasants who worked in malarious districts and from other persons who either had not suffered from any definite malarial manifestations, or, having suffered, were clinically cured, who had taken no quinine for at least three months and who had not the parasite present in their blood at the time they were subjected to the experiment. For the administration of the drug, an aqueous solution of nitrate of strychnine was used for subcutaneous injection and granules of the same containing 1 milligramme, this salt being chosen as being anhydrous and of more constant composition than the sulphate. The doses for adults were 2 to 3 milligrammes. Blood examination was made twice, on the day before the experiment and two hours after the administration of the strychnine. Positive results were obtained in 38 cases, or about 27 per cent. The mechanism of the action of strychnine in this respect seems to be that by stimulating the vaso-motor centre in the bulb it increases arterial pressure in consequence of the vaso-constriction produced, and induces a partial, if not total, emptying of the spleen, and hence the extrusion into the circulation of any malarial parasites which are contained in it. This test is useful, easy to carry out, and practical.

REGISTRATION INQUIRIES 100 YEARS AGO.

IN connexion with national registration there was published recently in the *Daily News and Leader* under the above title an interesting article raising medical questions, the answers to which should illustrate the progress made in medical and surgical science during the past century. The point to which the article mainly draws attention is that there was nothing in the form of registration to indicate a case of "hopeless physical incapacity." Such a case, therefore, and many others not quite so seriously afflicted, would be tabulated as fit for military service. In the earliest years of the nineteenth century, when the Napoleonic wars were in progress, forms of registration were employed which took note of physical conditions, as is well shown in the two following examples quoted by the *Daily News and Leader*:—

I —— do swear That I have no Rupture, nor am I subject to Fits, nor am I disabled by Lameness, or otherwise, but have the perfect use of my Limbs; and that I am not an Apprentice, or a Seaman, or Seafaring Man, and that I do not belong to His Majesty's Navy, Army or Marines, nor to the Militia.

I —— do make Oath, That I am by my Trade a ——, and have been usually resident in the Parish of ——, in the County of ——, and that I have —— Children born in wedlock, and that I have no Rupture, nor ever was troubled with Fits, and am in no way disabled by Lameness or otherwise, but have the perfect use of my Limbs; that I am not a Seaman, or Seafaring man, or an Apprentice; and that I do not belong to His Majesty's Navy, Army, or Marines, nor to any other corps of Militia. Witness my hand at —— the —— Day of —— One Thousand Eight Hundred and ——.

The interesting medical point in these forms is the allusion to "rupture" and "fits." In both the forms containing any questions about the physical condition of men willing to join the colours there

is an allusion to these afflictions. The author of the article in our contemporary concludes that "fits" were common among Englishmen of the Napoleonic era, and doubts if the frequency of their occurrence to-day merits similar special mention. The fits referred to were presumably due to epilepsy, at one time known in England as the "falling sickness," a disease presenting striking phenomena which have been described by the most ancient medical writers and in all ages studied by impostors, rogues, and malingerers. So far as we know epilepsy was not more common among men 100 years ago than at the present time; but what was more common—and this is the explanation we offer for the special mention of the disease in the official inquiries referred to—was the feigning of epilepsy. Feigning, happily, through the progress made in the diagnosis of disease now is almost unknown and is barely mentioned in modern text-books of medicine. We have to turn to books published more than half a century ago to find any detailed account of the methods of the impostors and of the methods in vogue for detecting them. In the first half of the last century amongst the number of feigned diseases epilepsy was one of the most common. Sailors and soldiers pretended to have epileptic fits in the hope of obtaining their discharge from the services. It was therefore taught that the means of detecting the feigned disease from true epilepsy were of importance to all practitioners, and it was more particularly necessary that they should be well known to those who were likely to join the medical departments of our fleets and armies. The special mention of "rupture" in the forms of by-gone days may be explained in a similar way. The word "rupture" in former days was more comprehensive, and referred not only to hernia but also to varicocele. Great stress was laid on the fact that the condition, like hernia, offered excuse for escaping some military duty. Hernia and varicocele for this reason were both held to be disqualifications for the services. The surgical operations now performed for the radical cure of these physical defects render any mention of them in a registration form to-day quite unnecessary. The introduction of the clause, "I have no rupture, nor am I subject to fits," in a sworn declaration probably acted as a deterrent to malingering subsequent to joining the colours. The article concludes with, "It happens, however, that our authorities completely ignore the whole question of health. So long as you are more than 15 or less than 65 it matters nothing to them whether you are half dead or very much alive." The writer, however, supplies an answer to this objection in the earlier part of the article when, very rightly, the reader is asked to reflect for a moment on the infinite possibilities that would have been presented to conscientious and painstaking folk if they had been asked to explain the state of their health. Few subjects present greater attractions to many people, and they will enlarge in a painfully minute manner on their symptoms. On the other hand, there are worthy folk who resent any inquiries about their physical condition, even when made by a friend.

THERE will be no meeting of the Section of Obstetrics and Gynæcology of the Royal Society of Medicine until Thursday, Dec. 9th. In the Calendar of the society two earlier meetings have been announced, but it has been found impossible to arrange for these.

BREATHING AND PHYSICAL EXERCISES FOR USE IN CASES OF WOUNDS IN THE PLEURA, LUNG AND DIAPHRAGM.

BY CORTLANDT MACMAHON, B.A. OXON.,
INSTRUCTOR FOR SPEECH DEFECTS AT ST. BARTHOLOMEW'S HOSPITAL, ETC.

THE exercises described have been used during the past months on soldiers suffering from wounds of the pleura, lung and diaphragm in St. Bartholomew's Hospital, King Edward VII.'s Hospital for Officers, Princess Henry of Battenberg's Hospital for Officers, No. 1 Base Hospital, and the Hospitals for Officers at 17, Park-lane and Dorchester House. The progress of the patients has been carefully noted by the physicians and surgeons in charge, and, as the improvement has been considered remarkable, the exercises are now set out in the hope that they may be of general use in similar cases.

The chief objects of the exercises are:—

(*a*) To prevent pleural adhesions forming and to break down existing adhesions by careful and gradual movements.

(*b*) To enable lungs, which have collapsed owing to pressure due to empyema, hæmothorax, and pneumothorax, to regain their normal condition.

(*c*) To reduce hæmothorax and pneumothorax.

(*d*) To restore the normal shape of the chest walls which have fallen in owing to collapse of the lungs.

(*e*) To assist the discharge of pus, where there is a drained empyema, by increasing the lung inflation.

(*f*) To improve the general condition by the tonic effects of the exercises, and especially to overcome breathlessness on exertion.

The early exercises can be carried out without moving the patient from his bed. At first an operator is necessary, who should, if possible, give the exercises daily for about a fortnight, after which time the patient can perform most of them for himself, and they should then be carried out night and morning half an hour before a meal. Great care must be taken that there is no exhaustion to the patient; only a few exercises should be given at each treatment, and after every six movements of each exercise a rest of at least two minutes should be given. I generally give only the first three movements (see below) for the first three days of the treatment, and, in a case of empyema that has recently undergone operation, the first four movements only should be given until the drainage-tube is removed.

When the patient can be moved from bed the exercises should be carried out on a narrow couch or table. The free movement of the arms in all directions is essential. Special attention is called to the fact that all the exercises are carried out in a recumbent position, and that on the correct performance of the first three exercises depends the success of the others. Care must be taken that the upper chest is not drawn up nor the abdominal wall contracted during inspiration. These are the two great faults often found. Any protrusion of the abdominal wall during inspiration must also be guarded against. The time of commencement of the exercises, their extent and duration are matters entirely for the physician or surgeon who has charge of the case. A marked

improvement in the appetite, the sleeping, and the general appearance will, as a rule, be noticed within a week of the commencement of the treatment.

The exercises are as follows, it being clearly understood that only a few should be carried out at each treatment, and the advance through the exercises should be gradual and special exercises selected to suit the individual condition. Each particular exercise should be carried out 18 times with a rest, as already stated, after each six movements of the exercise.

1. The operator places his hands on the side of the lower ribs level with the breast bone. The patient should breathe in through the nose and the lower ribs should be felt to be expanding strongly. There should be as little movement as possible of the upper chest. When the fullest inferior lateral costal expansion is acquired, the patient should breathe out through the open mouth and the ribs should be felt to regain their normal position.

2. The abdominal wall should be contracted inwards and then allowed to recover its normal position, so that an in-and-out movement is made. (This is a physical and not a breathing exercise and can be carried out 20 to 50 times.)

3. Combine the above movements—i.e., the patient breathes in through the nose and the lower ribs are felt to be strongly expanding. The mouth is opened wide and the abdominal muscles slowly and strongly contracted, so that the air is driven from the lungs.

4. The same inspiratory movement, but the breath should be held and the abdominal muscles contracted in three to five deliberate movements before breathing out.

5. Bend the body laterally away from the side of the injured lung to the fullest extent, so that the uninjured side of the thorax is partially compressed. The patient is on his back and the head and feet are drawn round as far as possible. The operator should press over the uninjured lung with both hands and the patient should breathe, as before, in through the nose and out through the mouth, contracting the abdominal muscles as he breathes out. (When there has been considerable collapse of the ribs on the side of the injured lung, and especially when there has been an abscess in the lung, great care must be taken in doing this movement, otherwise considerable muscular discomfort will occur within a few hours. A certain amount of pain will necessarily be felt if there has been a serious collapse in the chest wall, but this can, of course, be relieved.)

The following exercises are done with the breath held:—

6. Grasp the wrists of the patient as the arms lie at the side of the body, the operator standing behind the patient. Draw the arms outwards and upwards to above the head, pull on the arms steadily when the arms are at their fullest extent, then relax the pull. The patient should then breathe out quickly.

7. Arms as before. Bring them together in front and carry upwards to a right angle. Part the arms strongly backwards and horizontally.

8. The same exercise as the preceding one, but the arms are carried backwards at an angle of 45° upwards.

9. Commence with the patient's arms above the head, with the palms of the hands facing each other. The operator grasps the arms between the wrists and the elbows and presses the arms strongly downwards, and when the elbows approach the sides the abdominal muscles should contract. Force the elbows into the side and make the patient breathe out strongly.

10. Grasp the right wrist of the patient with the left hand, carry the arm forwards, and bring it to a right angle with the body. The operator should then place his right hand well under the scapula of the patient and pull the arm backwards and downwards as the patient strongly contracts the abdominal wall. Changing the hands, do the same movement on the other arm of the patient.

11. When there is marked collapse of one side of the upper chest the body should be bent as in Exercise 5, and the wrist of the arm on the wounded side grasped, the arm being fully extended above the head, the patient should then pull the arm downwards with the elbow into the side and should strongly contract the abdominal muscles as the arm descends. The operator gently pulls against the patient. (This exercise is exhausting unless carried out very carefully; six movements are sufficient during the first few applications of it.)

The earliest time at which the exercises have been commenced has been five weeks from the date of the wound.

Wimpole-street, W.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Certification of Insured Persons.

FOR some weeks past negotiations have been taking place between the Irish Insurance Commissioners, the representatives of the Approved Societies, and the representatives of the medical profession of Ireland, with a view of arranging a scheme for the notification of insured persons in Ireland. A substantial agreement was arrived at between these various interests as to the principles which should govern any arrangement, but there was still some doubt as to the amount of money which the Treasury would sanction for the purpose. The Commissioners and the societies agreed to concede the main principle for which the profession has been struggling for the past three years, that the societies should, subject to appeal to a referee, accept the certificate of the medical attendant of the insured member as evidence of incapacity to work. The medical profession has raised no objection to the appointment of referees, but insists that in making appointments only such men should be chosen as would, by their professional standing and character, command the respect of the profession and the public. On this point there is substantial agreement. The Insurance Commissioners have recently been empowered by the Treasury to make a definite offer as regards remuneration to the medical profession, and this offer was considered and accepted as a basis of agreement by a meeting of delegates of the profession held on Sept. 17th at the Royal College of Surgeons. It is proposed to provide an annual sum to be paid for certification, calculated on a capitation rate on the number of insured persons in the various areas in the country. The rate is to differ according to the density of the insured population: (1) In county boroughs and towns of a population of 10,000 and upwards the rate will be 1*s.* 3*d.* per insured person; (2) in county areas where the density of the insured population equals or

exceeds 0·02 per acre, 2s. per insured person; and (3) in county areas where the density of the insured population is less than 0·02 per acre, 2s. 6d. per insured person. About one-half of the rural area of Ireland falls into the second group and half into the third group. In accepting this offer the medical profession has sacrificed some of its original demand, which was for a sum equal to 2s. 6d. per insured person in the whole country, and it has recognised the special conditions which limit the resources of the Treasury at the present time. The Commissioners have not yet communicated their views as to the method by which the sums available for each area are to be distributed, but it is thought that the scheme most in favour is that of a "pool" from which payments would be made in proportion to the work done by the several practitioners in the area. The Irish Medical Committee has appointed a special committee to confer with the Commissioners and representatives of the societies in working out the details of the scheme, and it is hoped that no further differences may arise.

Trinity College and War Service.

Special Commencements were held in Trinity College on Sept. 24th for the purpose of conferring degrees on the candidates who, having passed the recent final medical examinations, wished to join the Royal Navy or the Royal Army Medical Corps. Mr. Justice Madden, Vice-Chancellor of the University, presided and made a statement as to the services already rendered by graduates of Dublin University in the army and navy. Of the Medical School, 650 past or present members are or have been on service; of these, 24 have laid down their lives for their country, 26 are among the wounded, 3 are missing, and 10 have been made prisoners of war. The number of distinctions gained by Trinity College men is high. Their work has been mentioned in despatches on 28 occasions. To five the Military Cross has been awarded, to one the Legion of Honour, to three the Distinguished Service Order, to two the Order of St. Michael and St. George, and to three the Companionship of the Bath. Ninety-five students of the Medical School, in their eagerness to serve their country, had accepted combatant commissions. Of these, 10 had fallen, 12 were wounded, and 3 were missing. Judge Madden gave particulars also of the part taken in the struggle by other than medical graduates. The women students and graduates, through their Voluntary Aid Detachment, had organised a hospital in Dublin, in which many wounded soldiers had been treated. Its work had earned the marked approval of the War Office authorities.

Tyrone Doctors' Salaries.

The dispute between the Tyrone doctors and the Omagh guardians is rapidly reaching a climax. On Sept. 18th Mr. P. McCartan applied for four weeks' holiday, the length of vacation decided upon by the Tyrone Medical Association, and nominated Mr. George Evans to do duty for him at the remuneration of 4 guineas per week. The board of guardians decided unanimously to allow only two weeks' holiday and to pay their usual remuneration. A notice signed by all the doctors of the union was handed in withdrawing from the arrangement made some time ago as regards consultation fees and fees for temporary services.

Sept. 28th.

ASYLUM REPORTS.

The Retreat, York (Annual Report for the Year 1914).—The total number of cases under treatment during the year was 261, the average daily number resident being 186·5 patients and 6 boarders, making 192 in all. There were admitted 43 certified patients, of whom 38 came direct to the Retreat, and 5 were transferred from other institutions. Of the direct admissions 26 were cases suffering from a first attack, and 12 had had previous attacks. As usual, melancholia was the most frequent form of mental disorder, being present in 14 cases. Dr. Bedford Pierce, the medical superintendent, comments on the fact that very little progress has been made in regard to the treatment of melancholia and that the recovery-rate is high, though convalescence may be long delayed. Dr. Pierce also notes the complete recovery of a case of acute delirium, and with regard to it considers that the procedure of certification of recent temporary cases of mental breakdown should be quite different from that needed for prolonged detention. There were in all 15 recoveries, and of these 4 were over 65 years of age. The percentage of total recoveries on the direct admissions was 39·47. The deaths numbered 7, making a death-rate of 3·75 per cent. on the average daily number resident. Twenty-seven voluntary boarders were admitted during the year. Six of these were still under treatment at the end of the year; of the remaining 21, 6 recovered and left, 5 left much improved, 5 left not improved, and 5 were placed under certificates.

Royal Eastern Counties Institution for Idiots, Imbeciles, and the Feeble-Minded, Colchester (Annual Report for the Year 1914).—The total number of cases under care during the year was 443. The average daily number resident was 394, being the largest in the history of the institution. The admissions reached the figure of 55, and of these the average age was 15 years. Fifteen of these might be described mentally as of quite high grade, with a fair promise that in each case they would not only learn a trade, but become quite useful at their work. Eighteen were cases which would need constant nursing care and would never be able to learn anything, most of them being partly or wholly paralysed and only six having any power of intelligible speech. Of the remaining 22 cases who came between these extremes, all attended regularly in the schools or the shops, and all were able to learn to some extent. The discharged patients numbered 13. Six of these were removed to go to other institutions, four were taken back to their own homes, two whose term had expired were allowed to go home pending re-election, and the thirteenth was only technically discharged, being re-admitted under a fresh order. It is evident that the institution continues to provide, by its system of re-election, almost complete permanent care for all those cases once admitted by election, and this to a greater extent than any other charitable institution for defectives in England. The number of deaths was 15, five lower than in the previous year. The death-rate on the average daily number resident was 3·8 per cent. Since the opening of the institution in 1859 the average rate has been 6·76 per cent. The number of deaths from all forms of tuberculosis was 4, or 26 per cent. of all the deaths that occurred. The work in the various shops continued satisfactorily. In the handicraft exhibition, held by the Essex Handicrafts Association, the patients in competition with normal individuals took five prizes, two for mats, two for chip wood-carving, and one for baskets.

Glasgow Royal Asylum (Annual Report for the Year 1914).—The total number of cases under treatment during the year was 558, the average daily number resident being 443. There were 116 admissions, and of these 39 sought treatment voluntarily. In 14 of the cases no definite cause for the insanity could be assigned, and in 45 there was a hereditary predisposition to mental or nervous disorders. In no case could the outbreak of the European War be considered as the cause of the breakdown, though in several the symptoms were coloured by its occurrence. Dr. L. R. Oswald, the physician-superintendent, states that it has appeared to him that the national need has raised the mental tone of the nation and that, to his observation, there has not at present been any increase of insanity. The discharges numbered 87, of whom 41 had recovered, making a percentage of 36 on the total number admitted.

The nature of the admissions was not favourable from a curative point of view, and a large percentage was senile or paralysed, or had been so long ill that no hopes of improvement could be entertained. There were 30 deaths. General paralysis accounted for 6, pneumonia for 7, and old age for 3. Phthisis pulmonalis was the cause of death in only 1 case, a striking testimony to the hygienic conditions obtaining in the hospital. The cause of death was confirmed in 22 cases by post-mortem examination. Dr. Oswald refers to the centenary of the asylum, which was opened in December, 1814, and comments on the deplorable condition of the insane 100 years ago. There is now no country which excels Scotland in the provision made for their treatment, and the beginning of the second century of the history of the hospital sees a great and increasing attention being given to the scientific study of mental disorders by the establishment of laboratories where skilled workers are grappling with one of the most obscure problems of medical science. The Glasgow Royal Asylum is fortunate in having near it one of those laboratories—the Western Asylums Research Institute—to the maintenance of which the directors contribute and which has proved of great benefit to the hospital.

Londonderry Lunatic Asylum (Annual Report for the Year 1914).—From the annual report of this asylum just issued it appears that the total number of cases under treatment for the year was 651. The expenditure during the 12 months was for maintenance £15,908 8*s.* 5*d.*, and for repayment of loans £2501 7*s.* 3*d.*, sums which show an increased expenditure on the previous year of £197 17*s.* 2*d.* in respect of maintenance and a decrease of £42 13*s.* 6*d.* in respect of loans. The receipts for the year amounted to £18,920 13*s.* 1*d.* The average cost for each patient was during the year £23 14*s.* 4*d.*

MEDICINE AND THE LAW.

A Coroner and a Medical Witness.

AT a recent inquest at Derby held upon the body of a man, 60 years of age, it was proved that the deceased fell down when in his garden and was taken into the house unconscious. His usual medical adviser was away, and another medical man was summoned, according to whose evidence the deceased was paralysed down his left side when he saw him, and that he died about five minutes later with all the symptoms of cerebral hæmorrhage. To this the doctor ascribed death in a certificate which he gave without hesitation, and the jury at the inquest which was afterwards held accepted his evidence and gave a verdict in accordance with it. The coroner, however, expressed great displeasure at a certificate of the cause of death having been given in the circumstances described. In our view the medical man's replies to questions on the subject completely justified his action. "I thought the symptoms were so typical that it would be absurd to have an inquest." "Nothing else could have caused his death but cerebral hæmorrhage." The coroner, from other observations which he made, appears to have thought that a medical man called to an unconscious patient five minutes before death would be liable to a penalty for giving a certificate, and so he informed the witness. In any case he held an inquest, believing, no doubt, that it was his duty to do so. The law on the subject is plain. The coroner is obliged by the Coroners Act, 1887, to hold an inquest when there is "reasonable cause" to suspect that a person "has died either a violent or an unnatural death, or has died a sudden death of which the cause is unknown." There was, of course, nothing in the facts known to the coroner to suggest a violent death, and with regard to it being an unnatural death, or a sudden death of which the cause was unknown, there was the certificate of a medical practitioner who had attended the deceased while he was still alive. If the coroner had "reasonable cause" to suspect that the certificate stated the cause of death wrongly he would be obliged to hold an inquest, but in that event it would equally be his duty to clear up all doubt by ordering a post-mortem examination. This, apparently, he did not do, while he is reported as having commented adversely upon the medical evidence to the effect that nothing could have caused death but cerebral hæmorrhage by saying, "I do not question that at all, but does it alter the fact that you had no right to give the certificate?" If the coroner did not question the correctness of the statement in the certificate he can hardly have had "reasonable cause" to suspect that the death was either unnatural or from an unknown cause. With regard to giving the certificate, a practitioner attending a deceased person in his last illness is bound to give a certificate, and though in the circumstances in which the doctor in question attended he might have declined to do so, it is difficult to see what legal justification he would have had in taking such a course. Whether he did so or not, it would have been open to the coroner, if informed of the death, to make suitable inquiry, and in the exercise of his discretion to hold an inquest or to abstain from doing so. There would appear to be more ground for suggesting that an unnecessary inquest was held than for saying that the medical man who gave the certificate acted in any way incorrectly.

THE ANNUAL REPORT OF THE CHIEF VETERINARY OFFICER FOR 1914.[1]

THE issue of the annual report for the year 1914 of Sir Stewart Stockman, Chief Veterinary Officer and Director of Veterinary Research to the Board of Agriculture and Fisheries, has been delayed by the fact that Sir Stewart Stockman has been busily occupied in research into the treatment of swine fever by serum and vaccination. The report is a very interesting one. It opens with the consideration of foot-and-mouth disease, and accounts are given of nine outbreaks, an increase of seven over those occurring in 1913. In several cases the origins of infection could not be traced, but in other instances the sources of the epizootic were ascribed to imported chilled meat being fed to pigs, to butchers concerned with animals in a previous outbreak visiting a dairy, and to a cow sent for service to a bull on infected premises. All the outbreaks were promptly dealt with by the stamping-out method.

Outbreaks of swine fever to the number of 4356 were confirmed, which represents a considerable increase since 1913. 39,277 pigs were slaughtered by the Board, which is a proportionately smaller number than were sacrificed in previous years. Swine fever will probably in future be dealt with by a protective serum in infected herds and the production of immune herds. The Chief Veterinary Officer has prepared a report on the treatment of the disease by serum, and there is reason to believe that the control and eradication of the scourge will be governed by his suggestions. Other countries have adopted this method satisfactorily for some time.

Glanders shows a gratifying decrease in number of outbreaks, and the satisfactory position is undoubtedly due to a wide recognition of the use of mallein in the extermination of the disease. Attention is called in the report to the rather slack view taken as regards "in-contacts," where horses belonging to one and the same owner are being constantly shifted from one stable to another. A word of advice is also given as to the use of the certificates of veterinary surgeons in connexion with testing newly purchased ponies under the Mines Act. The certificate shown may not apply to the pony to be sold, or may be of too ancient date to be valuable. Eleven out of the 18 outbreaks discovered under the Mines Act were in Russian ponies. More than half the reports of suspected cases of anthrax proved on investigation to be fallacious, and out of the 1150 lots of pathological material sent to and examined at the laboratory, 722 outbreaks were declared to exist. A dog and two cats died from feeding on anthraxed carcasses, and as these animals carry portions of flesh over large distances the necessity of guarding such carcasses from flesh-eating animals is indicated. Some animals bedded on shoddy from woollen mills contracted anthrax, and two horses died from anthrax that were respectively carting hides and dragging a cow dead from anthrax.

There were nine less outbreaks of scab in sheep than in previous years, and Scotch sheep were mostly concerned in spreading the disease. Ineffectual dipping is the chief

[1] Annual Report of the Chief Veterinary Officer of the Board of Agriculture and Fisheries for the Year 1914. Wyman and Sons, Limited, Bream's-buildings, Fetter-lane, London, E.C. Price 3d.

obstacle to the eradication of sheep scab, and some of the difficulties occurring in the case of Scotch and Irish sheep are mentioned.

Tuberculosis in swine is considered to be increasing. In many cases it has been encountered in making post-mortem examinations in swine fever outbreaks. Its prevention is a subject well worthy of attention. It is usually of bovine origin and infected sows may give the disease to their progeny through their milk. Fowls, too, are considered to be capable of infecting pigs through their droppings.

The Tuberculosis Order and the Parasitic Mange Order have both been suspended during the war, and not much information is therefore obtainable under these heads. That there is room for the use of serum and vaccine for swine erysipelas is proved by the fact that although the disease is not notifiable 2892 cases were recorded in 1914. These were chiefly encountered in investigating suspected cases of swine fever. New laboratory premises are now being constructed by the Board and a supply of serum and vaccine for swine erysipelas will soon be available. The manufacture of anti-swine fever serum was begun by the Board at the end of September, and up to the end of December 137,000 c.c. were distributed for use.

Investigations were conducted at the laboratory of the Board into redwater and epizootic abortion. With regard to the latter, the findings tend to support the view that infectious abortion is due to a different kind of microbe in different species of animals. The interchange of cows is the main factor in spreading bovine abortion. The ewe may pass out infection on to the pasture a considerable time before the act of abortion, but this is not so in the case of the cow. It is worthy of note by the medical profession that the bacillus of bovine abortion may be excreted for long periods in the milk of animals which have become infected. Immunisation combined with general measures of prevention offers the best solution of the difficulty. The Board has been experimenting with two kinds of vaccine, and the collected tabulated results are deemed to be encouraging.

The report shows evidence of advance all along the line.

Public Health.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

County Borough of Croydon.—Dr. R. V. Clark's annual report for the year 1914 contains an interesting, though brief, account of a special inquiry into the bacteriological purification of water. The inquiry was directed towards determining the value of chlorine as an agent for the bacteriological purification of potable water-supplies, and the best method of removing chlorine from the water after the bactericidal effect had been attained. In making this inquiry Dr. Clark was assisted by Dr. L. Rajchman. Throughout the experiments chlorine was added in the proportion of 1 part of chlorine to 1,000,000 parts of water or ½ part per 1,000,000 as was desired. In every instance the water treated was previously charged with bacteria to an extent far beyond that which could ever occur in an ordinary water-supply. The contamination took the form of pure cultures of intestinal bacteria, spore-bearing bacteria (the most resistant form of bacterial life), urine containing bacteria, water charged with human excreta, and surface road washings. The results of the experiments were in all cases highly satisfactory—the treatment by chlorine invariably destroyed all the organisms, the water at the end of the process being found to be bacteria-free. The second stage of each experiment was an inquiry into the means of removal of the chlorine from the water before general distribution. Three methods were advocated—viz., the addition of an alumina compound to the water, or the addition of sodium hyposulphite to the water, or the filtration of the water through a layer of charcoal. The two methods first named were found to be absolutely ineffective. The filtration through charcoal, on the other hand, was entirely successful. Although Croydon is fortunate in possessing a water-supply of remarkable natural purity, one of the wells yields a water which, at long intervals, gives signs on bacteriological examination of a possibility of contamination. Although even on these occasions this water was much further from the danger zone than that often consumed by other similar communities, the borough council were of opinion that steps should be taken to ensure a degree of purity as nearly as possible absolute, and with this end in view, after the results of the above experiments had been communicated to them, they resolved that the chlorine method of treatment with provision for subsequent dechlorinisation should be introduced. Steps are accordingly being taken to carry this resolution into effect.

Bournemouth.—Dr. A. D. Edwards states in his annual report for the year 1914 that considerable additional work was thrown upon the public health department as a result of the billeting of troops of the 25th Division in the borough. The efforts made by the civilian officials to promote the comfort and health of the men billeted were appreciated by the military medical staff, as evidenced by a courteous letter of thanks received from the senior medical officer of the 25th Division. Mr. Cooper, the chief sanitary inspector, makes the following observations in respect of the arrangements for billeting which were agreed upon by the military authorities, the billeting officers, and the sanitary department: 1. A list of unsuitable houses in the various districts was sent from time to time to the billeting officers, including houses occupied by consumptives and where special cases of illness were being nursed at home. 2. Arrangements were made as far as practicable for the soldiers to occupy the ground-floor apartments and the civilians the first-floor rooms. 3. Periodical inspections were made of the houses wholly occupied by troops. 4. On the removal of an infectious civilian case a notification was sent to the military sanitary authorities and the men were detained in the billets to be visited by the military medical officer and until the necessary disinfection was carried out and the isolation of contacts supervised. 5. Four special disinfecting stations were fitted out with suitable apparatus and baths for treatment of verminous persons and their clothing, and for cases of scabies. 6. Periodical inspection was made of food-supplies sent to houses wholly occupied by troops. 7. Daily collection of house and other refuse was made at the houses. 8. Additional temporary sanitary conveniences were provided in those districts where the troops were billeted in large numbers.

VITAL STATISTICS.

VITAL STATISTICS OF LONDON DURING AUGUST, 1915.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the 10 diseases specified in the table was equal to an annual rate of 5·9 per 1000 of the population, estimated at 4,516,612 persons; in the three preceding months the rates were 6·4, 6·7, and 6·9 per 1000 respectively. The lowest rates were recorded in Hammersmith, St. Marylebone, Stoke Newington, Lambeth, Camberwell, and Lewisham; and the highest rates in Finsbury, Shoreditch, Bethnal Green, Stepney, and Poplar. The prevalence of scarlet fever showed a considerable decline from that recorded in other recent months; this disease was proportionally most prevalent in Finsbury, Shoreditch, Bethnal Green, Stepney, and Poplar. The Metropolitan Asylums Hospitals contained 2334 scarlet fever patients at the end of August, against 2221, 2411, and 2400 at the end of the three preceding months; the weekly admissions averaged 273, against 283, 326, and 307 in the three preceding months. Diphtheria was rather less prevalent than it had been in the preceding month; among the several metropolitan boroughs this disease was proportionally most prevalent in the City of Westminster, Finsbury, Shoreditch, Bethnal Green, Stepney, Battersea, and Deptford. The number of diphtheria patients under treatment in the Metropolitan Asylums Hospitals was 1133 at the end of August, against 1085, 1019, and 1078 at the end of the three preceding months; the weekly admissions averaged 143, against 128, 133, and 147 in the three preceding months. The prevalence of enteric fever showed a considerable diminution during August; this disease was proportionally most prevalent in Shoreditch, Bethnal Green, Stepney, Poplar, Deptford, and Greenwich. The Metropolitan Asylums Hospitals contained 63 enteric fever patients at the end of the month, against 49, 56, and 54 at the end of the three preceding months; the weekly admissions averaged 9, against

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING AUGUST, 1915.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1914.	NOTIFIED CASES OF INFECTIOUS DISEASE.												DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.									Deaths from all causes.	Death-rate per 1000 living.†
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Poliomyelitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Enteric fever.	Diarrhœa and enteritis (under 2 years).	Total.	Annual rate per 1000 persons living.		
LONDON	**4,516,612**	—	**1112**	**584**	—	**46**	**8**	**14**	**266**	**19**	**9**	**2053**	**5·9**	—	**45**	**16**	**37**	**46**	**2**	**309**	**455**	**1·3**	**4016**	**11·6**
West Districts.																								
Paddington	142,055	—	19	13	—	3	—	—	11	—	—	46	4·2	—	—	—	1	—	—	12	13	1·2	118	10·7
Kensington	170,817	—	48	8	—	—	—	—	5	1	—	62	4·7	—	1	1	—	2	—	8	12	0·9	155	11·8
Hammersmith	124,750	—	15	7	—	4	—	—	3	—	—	29	3·0	—	—	—	—	1	—	2	3	0·3	87	9·0
Fulham	158,849	—	31	9	—	2	—	1	5	—	1	49	4·0	—	—	—	—	3	—	6	9	0·7	118	10·0
Chelsea	63,791	—	9	8	—	2	—	—	1	1	—	21	4·3	—	—	—	1	—	—	1	2	0·4	57	11·0
City of Westminster	152,346	—	37	28	—	1	—	—	3	2	—	71	6·1	—	—	—	1	1	—	2	4	0·3	110	9·9
North Districts.																								
St. Marylebone	112,892	—	16	8	—	1	—	1	4	—	—	30	3·5	—	—	2	—	1	—	3	6	0·7	93	10·9
Hampstead	86,731	—	18	7	—	1	—	—	1	—	—	27	4·1	—	1	1	2	—	—	4	8	1·2	58	9·2
St. Pancras	212,497	—	58	19	—	3	—	—	17	1	—	98	6·0	—	1	—	—	—	1	8	10	0·6	204	12·4
Islington	324,764	—	92	40	—	2	—	2	13	—	1	150	6·0	—	1	2	1	5	—	17	26	1·0	298	11·7
Stoke Newington	50,454	—	7	1	—	—	—	—	1	—	1	10	2·6	—	1	—	—	1	—	—	2	0·5	44	10·8
Hackney	223,724	—	55	30	—	3	2	1	16	1	—	108	8·3	—	2	—	1	1	—	18	22	1·3	179	10·5
Central Districts.																								
Holborn	45,861	—	9	7	—	1	—	—	2	—	—	19	5·4	—	1	—	1	—	—	2	4	1·1	44	12·5
Finsbury	83,212	—	43	13	—	—	—	1	4	2	—	63	9·9	—	1	—	1	1	—	15	18	2·8	89	13·7
City of London	17,129	—	3	2	—	—	—	—	1	—	—	6	4·6	—	—	—	—	—	—	—	—	—	19	15·1
East Districts.																								
Shoreditch	108,869	—	42	21	—	—	—	—	11	1	—	75	9·0	—	2	2	—	3	—	19	26	3·1	125	15·5
Bethnal Green	127,662	—	76	45	—	—	—	1	13	1	2	138	14·1	—	3	2	1	1	—	13	20	2·0	106	11·2
Stepney	273,265	—	147	106	—	2	—	—	28	1	1	285	13·6	—	4	4	3	2	—	37	50	2·4	271	13·5
Poplar	160,222	—	51	23	—	2	—	1	16	—	1	94	7·7	—	5	—	3	5	—	27	40	3·3	199	16·0
South Districts.																								
Southwark	186,941	—	41	20	—	1	1	3	14	1	—	81	5·7	—	4	1	1	1	—	22	29	2·0	200	14·0
Bermondsey	124,213	—	23	11	—	1	—	1	11	1	—	48	5·0	—	3	—	2	2	—	14	21	2·2	125	13·1
Lambeth	296,724	—	39	29	—	1	—	1	7	—	—	77	3·4	—	3	1	2	2	—	12	20	0·9	296	12·7
Battersea	167,338	—	45	27	—	5	—	—	10	—	1	88	6·9	—	4	—	3	3	—	10	20	1·6	137	12·8
Wandsworth	338,998	—	56	39	—	3	—	1	21	2	1	123	4·7	—	1	—	7	3	1	12	24	0·9	209	8·0
Camberwell	262,020	—	42	18	—	—	—	—	13	—	—	73	3·6	—	1	—	2	—	—	17	20	1·0	219	10·8
Deptford	109,182	—	28	17	—	—	—	—	12	1	—	58	6·9	—	2	—	—	2	—	14	18	2·1	120	14·1
Greenwich	96,037	—	12	11	—	5	—	—	10	1	—	39	5·3	—	1	—	—	4	—	10	15	2·0	117	15·6
Lewisham	172,433	—	26	8	—	2	—	—	6	—	—	42	3·2	—	3	—	—	1	—	1	5	0·4	119	8·8
Woolwich	122,836	—	24	9	—	1	—	—	7	2	—	43	4·6	—	—	—	4	1	—	3	8	0·8	100	10·9
Port of London	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup. † The death-rates are corrected for variations in sex and age constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard.

6, 10, and 9 in the three preceding months. Erysipelas was proportionally most prevalent in Shoreditch, Bethnal Green, Stepney, Poplar, Deptford, and Greenwich. The 14 cases of puerperal fever notified during the month included 3 in Southwark and 2 in Islington. The 19 cases of cerebro-spinal meningitis included 2 each in the City of Westminster, Finsbury, Wandsworth, and Woolwich; and of the 9 cases of poliomyelitis 2 belonged to Bethnal Green.

The mortality statistics in the table relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided; the death-rates from all causes are further corrected for variations in the sex and age constitutions of the populations of the several boroughs. During the four weeks ending August 28th the deaths of 4016 London residents were registered, equal to an annual rate of 11·6 per 1000; in the three preceding months the rates were 14·6, 12·2, and 11·1 per 1000. The death-rates ranged from 8·0 in Wandsworth, 8·8 in Lewisham, 9·0 in Hammersmith, 9·2 in Hampstead, and 9·9 in the City of Westminster, to 14·0 in Southwark, 14·1 in Deptford, 15·1 in the City of London, 15·5 in Shoreditch, 15·6 in Greenwich, and 16·0 in Poplar. The 4016 deaths from all causes included 455 which were referred to the principal infectious diseases; of these, 45 were attributed to measles, 16 to scarlet fever, 37 to diphtheria, 46 to whooping-cough, 2 to enteric fever, and 309 to diarrhœa and enteritis among children under 2 years of age. No death from any of these diseases was recorded in the City of London; among the metropolitan boroughs they caused the lowest death-rates in Hammersmith, the City of Westminster, Chelsea, and Lewisham; and the highest rates in Finsbury, Shoreditch, Stepney, Poplar, Bermondsey, and Deptford. The 45 deaths from measles were 57 below the corrected average number in the corresponding period of the five preceding years; this disease was proportionally most fatal in Bethnal Green, Poplar, Southwark, and Battersea. The 16 deaths from scarlet fever were slightly below the corrected average, and included 4 in Stepney, and 2 each in St. Marylebone, Islington, Shoreditch, and Bethnal Green. The 37 fatal cases of diphtheria were 8 above the corrected average number; this disease was proportionally most fatal in Hampstead, Poplar, Bermondsey, Battersea, Wandsworth, and Woolwich. The 46 deaths from whooping-cough were 9 below the corrected average; the highest death-rates from this disease were recorded in Fulham, Shoreditch, Poplar, Battersea, Deptford, and Greenwich. Only 2 deaths from enteric fever were registered during August; one belonged to St. Pancras and one to Woolwich; in the corresponding period of the five preceding years the average was 10. The mortality from diarrhœa and enteritis among children under 2 years of age was proportionally greatest in Finsbury, Shoreditch, Stepney, Poplar, and Deptford. In conclusion, it may be stated that the aggregate mortality in London during the month from the principal infectious diseases, excluding diarrhœa, was 31·5 per cent. below the average.

HEALTH OF ENGLISH TOWNS.

In the 96 largest English and Welsh towns with populations exceeding 50,000 persons at the last Census, 7482 births and 4700 deaths were registered during the week ended Saturday, Sept. 25th. The annual rate of mortality in these towns, which had been 12·1, 14·0, and 13·8 per 1000 in the three preceding weeks, fell in the week under notice to 13·5 per 1000 of their aggregate population estimated at 18,136,180 persons at the middle of last year. During the first 12 weeks of the quarter just ended the mean annual death-rate in these towns averaged 12·2 per 1000, and coincided with that recorded in London. The annual death-rate last week ranged from 5·2 in Lincoln, 5·8 in Reading, 5·9 in Swindon, 6·6 in Ealing, 7·0 in Leyton, and 7·4 in Ilford, to 21·8 in Gateshead, 23·5 in Sunderland, 24·7 in Rotherham, 25·7 in Carlisle, and 26·1 in Barnsley.

The 4700 deaths from all causes were 85 below the number in the previous week, and included 928 which were referred to the principal epidemic diseases, against 833 and 802 in the two preceding weeks. Of these 928 deaths, 785 resulted from infantile diarrhœal diseases, 47 from whooping-cough, 42 from diphtheria, 22 from measles, 18 from scarlet fever, and 14 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 2·7, or 0·4 per 1000 in excess of the rate in the previous week. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had been 593, 664, and 638 in the three preceding weeks, further rose to 785 last week, and included 183 in London, 58 in Liverpool, 47 in Birmingham, 35 in Sheffield, 29 in Manchester, 20 in Leeds, 19 in Hull, and 18 in Salford. The deaths referred to whooping-cough, which had been 50, 44, and 55 in the three preceding weeks, fell to 47 last week, of which 18 occurred in London, 6 in Sheffield, and 3 in Liverpool. The fatal cases of diphtheria, which had been 33, 44, and 54 in the three preceding weeks, fell to 42 last week; 12 deaths were registered in London and 3 each in Stoke-on-Trent and Manchester. The deaths attributed to measles, which had been 41, 47, and 26 in the three preceding weeks, further declined to 22 last week, and included 5 in London and 2 each in Birmingham and Nottingham. The deaths referred to scarlet fever, which had declined from 26 to 14 in the four preceding weeks, rose to 18 last week; 3 deaths were registered in London and 2 each in Ilford, Stoke-on-Trent, and Sheffield. The fatal cases of enteric fever numbered 14, against 6, 17, and 15 in the preceding weeks, and included 2 deaths each in Portsmouth, Tynemouth, and Cardiff.

The number of scarlet fever cases under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had increased from 2360 to 2590 in the four preceding weeks, further rose to 2656 on Saturday last; 372 new cases were admitted during the week, against 365, 385, and 429 in the three preceding weeks. These hospitals also contained on Saturday last 1344 cases of diphtheria, 58 of measles, 54 of enteric fever, and 12 of whooping-cough, but not one of small-pox. The 1212 deaths from all causes in London were 64 fewer than in the previous week, and corresponded to an annual death-rate of 14·0 per 1000. The deaths referred to diseases of the respiratory system, which had increased from 99 to 151 in the five preceding weeks, were 150 in the week under notice, and were 10 in excess of the number registered in the corresponding week of last year.

Of the 4700 deaths from all causes in the 96 towns, 210 resulted from different forms of violence and 368 were the subject of coroners' inquests, while 1360 occurred in public institutions. The causes of 33, or 0·7 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and in its 14 suburban districts, in Manchester, Sheffield, Leeds, Bristol, Bradford, Hull, and in 60 other smaller towns. Of the 33 uncertified causes of death, 8 were registered in Birmingham, 6 in South Shields, 4 in Liverpool, 3 in Gateshead, and 2 in Bootle.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,345,500 persons at the middle of this year, 956 births and 615 deaths were registered during the week ended Saturday, Sept. 18th. The annual rate of mortality in these towns, which had been 13·3, 12·2, and 14·0 per 1000 in the three preceding weeks, fell to 13·7 per 1000 in the week under notice. During the first 11 weeks of the quarter just ended the mean annual death-rate in these towns averaged 13·5, against 12·0 per 1000 in the large English towns. The death-rate during the week ranged from 6·3 in Motherwell, 8·1 in Hamilton, and 8·2 in Clydebank to 15·8 in Aberdeen, 17·1 in Ayr, and 17·4 in Greenock.

The 615 deaths from all causes were 14 fewer than the number in the previous week, and included 83 which were referred to the principal epidemic diseases, against 71 and 89 in the two preceding weeks. Of these 83 deaths, 41 resulted from infantile diarrhœal diseases, 15 from measles, 13 from scarlet fever, 9 from diphtheria, 4 from whooping-cough, and 1 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·8, against 2·3 per 1000 in the large English towns. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had been 30, 32, and 35 in the three preceding weeks, further rose to 41, and included 25 in Glasgow, 5 in Edinburgh, and 3 in Aberdeen. The deaths attributed to measles, which had declined from 46 to 13 in the seven preceding weeks, slightly rose to 15, of which 6 occurred in Edinburgh and 4 in Glasgow. The fatal cases of scarlet fever, which had increased from 8 to 13 in the four preceding weeks, were again 13 in the week under review, and comprised 6 in Glasgow, 4 in Aberdeen, 2 in Paisley, and 1 in Ayr. The deaths attributed to diphtheria, which had been 9, 4, and 18 in the three preceding weeks, fell to 9, and included 4 in Edinburgh and 2 in Paisley. The 4 deaths from whooping-cough were 2 below the average in the three preceding weeks, and showed no excess in any individual town. The fatal case of enteric fever was registered in Dundee. In addition to the foregoing deaths, a fatal case of typhus fever was recorded in Paisley.

The deaths referred to diseases of the respiratory system, which had been 58, 56, and 65 in the three preceding weeks, further rose to 83 in the week under notice, and were 21 in excess of the number recorded in the corresponding week of last year. The deaths attributed to violence numbered 25, against 17 and 24 in the two preceding weeks.

In the 16 largest Scotch towns 1056 births and 642 deaths were registered during the week ended Saturday, Sept. 25th. The annual rate of mortality in these towns, which had been 12·2, 14·0, and 13·7 per 1000 in the three preceding weeks, rose to 14·3 per 1000 in the week under notice. During the first 12 weeks of the quarter just ended the mean annual death-rate in these towns averaged 13·5, against a corresponding rate of 12·2 per 1000 in the large English towns. Among the several towns the death-rate last week ranged from 7·5 in Motherwell, 7·8 in Ayr, and 10·3 in Edinburgh, to 16·4 in Clydebank, 18·9 in Coatbridge, and 20·3 in Dundee and in Hamilton.

The 642 deaths from all causes were 27 in excess of the number recorded in the previous week, and included 98 which were referred to the principal epidemic diseases, against 89 and 83 in the two preceding weeks. Of these 98 deaths, 65 resulted from infantile diarrhœal diseases, 14 from scarlet fever, 10 from diphtheria, 6 from measles, 2 from whooping-cough, and 1 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 2·2, against 2·7 per 1000 in the large English towns. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had increased from 28 to 41 in the five preceding weeks, further rose to 65 last week, of which 34 were registered in Glasgow, 8 in Dundee, 5 in Greenock, 4 each in Edinburgh and Hamilton, and 3 in Coatbridge. The deaths attributed to scarlet fever, which had increased from 8 to 13 in the five preceding weeks, were 14 last week, and included 7 in Glasgow, 3 in Aberdeen, and 2 in Edinburgh. The fatal cases of diphtheria, which had been 4, 18, and 9 in the three preceding weeks, were 10 last week, of which 4 occurred in Edinburgh and 3 in Glasgow. The deaths attributed to measles, which had been 16, 13, and 15 in the three preceding weeks, fell to 6, and showed no excess in any individual town. Of the 2 fatal cases of whooping-cough 1 occurred in Edinburgh and 1 in Aberdeen. The death from enteric fever was registered in Coatbridge.

The deaths referred to diseases of the respiratory system, which had been 56, 65, and 83 in the three preceding weeks, further rose to 86 in the week under notice, and were 22 above the number recorded in the corresponding week of last year. The deaths attributed to violence numbered 27, against numbers increasing from 17 to 25 in the three preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland with an aggregate population estimated at 1,212,380 persons at the middle of this year, 533 births and 381 deaths were registered during the week ended Saturday, Sept. 25th. The annual rate of mortality in these towns, which had increased from 13·6 to 16·8 per 1000 in the five preceding weeks, fell to 16·4 per 1000 in the week under notice. During the first 12 weeks of the quarter just ended the mean annual death-rate in these towns averaged 14·6, against corresponding rates of 12·2 and 13·5 per 1000 in the English and Scotch towns respectively. The annual death-rate last week was equal to 19·6 in Dublin (against 14·0 in London and 14·9 in Glasgow), 11·4 in Belfast, 19·7 in Cork, 20·2 in Londonderry, 13·5 in Limerick, and 9·5 in Waterford, while in the 21 smaller towns the mean rate was 19·0 per 1000.

The 381 deaths from all causes were 9 fewer than in the previous week, and included 61 which were referred to the principal epidemic diseases, against 39 and 57 in the two preceding weeks. Of these 61 deaths, 45 resulted from infantile diarrhœal diseases, 7 from whooping-cough, 4 from scarlet fever, 2 each from enteric fever and measles, and 1 from diphtheria, but not one from small-pox. The mean annual death-rate from these diseases was equal to 2·6, against corresponding rates of 2·7 and 2·2 per 1000 in the English and Scotch towns respectively. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had been 41, 30, and 44 in the three preceding weeks, were 45 last week, and included 24 in Dublin, 11 in Belfast, and 5 in Cork. The deaths attributed to whooping-cough, which had been 8, 6, and 7 in the three preceding weeks, were again 7 last week, and included 2 each in Londonderry and Ballymena. The 4 fatal cases of scarlet fever were slightly in excess of the average in the earlier weeks of the quarter, but showed no excess in any individual town. The 2 deaths from measles occurred in Dublin, and those from enteric fever in Dublin and Belfast, while the fatal case of diphtheria was registered in Newry.

The deaths referred to diseases of the respiratory system, which had been 28, 41, and 48 in the three preceding weeks, were 47 in the week under notice. Of the 381 deaths from all causes, 112, or 29 per cent., occurred in public institutions, and 6 resulted from violence. The causes of 8, or 2·1 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the large English towns the proportion of uncertified causes did not exceed 0·7 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE undermentioned have been granted commissions as Surgeons, for temporary service in His Majesty's Fleet:—Dated Sept. 20th: Richard Edward Tottenham and Frank Chafen Newman. Harold Fey Percival has been entered as Surgeon for temporary service (dated Sept. 21st).

ARMY MEDICAL SERVICE.

The undermentioned temporary Colonels to be temporary Surgeon-Generals:—Dated Sept. 26th: Sir George H. Makins, K.C.M.G., C.B., and Sir Anthony A. Bowlby, K.C.M.G.

ROYAL ARMY MEDICAL CORPS.

Herbert Lightfoot Eason to be temporary Lieutenant-Colonel (dated Sept. 13th).

The undermentioned to be temporary Majors: Dated Sept. 9th: Henry Maurice Chasseaud. Dated Sept. 15th: William Richard Dawson and Francis Carmichael Purser. Dated Sept. 29th: Temporary Captain Albert T. Duka, D.S.O.

The undermentioned temporary Lieutenants to be temporary Captains: Dated August 5th: Thomas H. Pettit. Dated August 16th: Lionel C. E. Murphy. Dated August 29th: Percy E. Adams and William B. G. Angus.

The appointment to a temporary Lieutenancy of Thomas Ewart Ashley is antedated to April 26th.

The undermentioned Captains of the Canadian Army Medical Corps to be temporary Lieutenants:—Dated August 20th: James Henderson. Dated August 27th: Cecil Roy Learn.

The undermentioned Lieutenants of the Canadian Army Medical Corps to be temporary Lieutenants:—Dated August 12th: Albee Amos Skeels. Dated August 20th: Andrew McConnell Davidson, William James Chapman, Alexander Ross, Dimock Stanley Cassidy, David Alexander Volume, Bernard Francis, Howard Harvey, George Perry Armstrong, James Thornley Bowman, Charles Alexander Fox Gaviller, James Frederick Adamson, Floyd Cecil Stewart, John Ferrell Wood, William Edward Ainley, George Boyd McTavish, John Robert Irwin, James Blain Haverson, Douglas St. Clair Creighton, George Herbert Laurence Armstrong, John Alexander Wellwood, John Frederick Sadleir, Alexander Russell Munroe, Francis Lorne McKinnon, David Levern Dick, and Harry Frederick MacKendrick. Dated August 21st: Jermyn Oscar Baker.

The undermentioned relinquish their commissions: Temporary Major Thomas Kay (dated August 20th), and temporary Lieutenants Robert B. T. Stephenson (dated August 30th), Vincent F. Lennane (dated Sept. 17th), and Peter C. Lornie (dated Sept. 28th).

Temporary Lieutenant Archibald Henderson relinquishes his commission on account of ill-health (dated Sept. 24th).

Temporary Lieutenant Herbert M. Harrison relinquishes his commission (dated Feb. 11th).

The undermentioned to be temporary Lieutenants:—Dated July 27th: Jacob Rosenthal. Dated August 12th: Temporary Lieutenant Graham Colville Ramsay, from the Indian Medical Service. Dated August 14th: Hugh Frederick Sneldon, Edmund Hughes Flanigan, John Cameron Thomson Teggart, John Franklin Young, William Girdwood, Arthur Philip Woollright, and Alfred James Ireland. Dated August 23rd: William Alfred Costain. Dated Sept. 3rd: John Lawrence Graham-Jones. Dated Sept. 6th: George Marshall, Norman Bradley, William Henry Harris, and Reginald Leslie Norman. Dated Sept. 7th: Frank Lequesne Pelly, Hamilton Joseph Bell, Thomas Francis Shackleton, Charles Game Angus Chislett, George Francis Oldershaw, William Shanks, John Norman MacDonald, George Oliver Connell, Francis William Joynes, Frederick John Kirkness, Alexander Goodsir Mowat, Arthur Alan Miller, Harold Percy Crampton, Richard Wellington Shegog, James Frank Hoare, and Alfred Chad Turner Woodward. Dated Sept. 8th: James Leith Hendry, Gilbert William Charsley, Wilfred Fairclough, William Barbour Thompson, Robert Edward Burnet Yelf, Thomas Boyd Riddall, Frederick Simpson, William Elisha Huff-Hewitt, John Robson Dobbin, Archibald Gardner, John MacKinnon, Charles Clouston Irvine, Lionel Matthew Rowlette, and Claude Sebastian Van Renan Harwood. Dated Sept. 9th: Charles Roland Babington Eyre, James Denis O'Connor, John Donald, and Archibald Gladstone Naismith. Dated Sept. 17th: Geoffry Challen Linder to be temporary Honorary Lieutenant.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps: Supplementary to Regular Units or Corps.

The undermentioned Lieutenants (on probation) are confirmed in their rank: William Bryars, George Chesney, Samuel Browne, John S. Armstrong, Oswald D. Jarvis, Rudolph A. Peters, John A. Binning, and John E. Rusby.

TERRITORIAL FORCE.

Army Medical Services.

Lieutenant-Colonel Thomas F. Dewar, from Sanitary Service, to be Deputy Assistant Director of Medical Services, Highland Division (dated April 23rd).

Royal Army Medical Corps.

Highland Field Ambulance: The undermentioned Captains to be temporary Majors: John D. Fiddes and John H. Stephen. Lieutenant Frederick C. Chandler to be Captain.

London (City of London) Field Ambulance: The undermentioned Lieutenants to be Captains: Martin B. H. Stratford, Louis Courtauld, Robert W. A. Salmond, Leonard A. Harwood, Frank H. Robbins, Robert E. Barnsley, Julian Taylor, Kenneth V. Smith, and Leonard H. Wootton.

North Midland Field Ambulance: The undermentioned Lieutenants to be Captains: John C. Grieve, Ronald B. Berry, Francis G. Bennett, Charles B. Johnstone, Lionel T. Challenor, Robert B. M. Yates, Bertram S. Wills, Thomas Graham, Samuel R. Foster, William Boyd, Joseph C. Harris, Guy F. Haycraft, Stanley S. B. Harrison, and William B. Williams.

Eastern General Hospital: Lieutenant Herbert John Walker to be Captain on the permanent personnel.

London (City of London) General Hospital: Captain Louis A. Dunn resigns his commission on account of ill-health.

London (City of London) Sanitary Company: The undermentioned Lieutenants to be Captains: Martin Priest, Evelyn A. Cooper, George White, Robert Jacobs, Robert Robison, Andrew A. McWhan, Charles N. Draycott, Constant W. Ponder, and William N. W. Kennedy. Lieutenant W. F. Thompson resigns his commission on account of ill-health.

London Casualty Clearing Station: The undermentioned Lieutenants to be Captains: Hubert J. B. Fry and Arthur H. Pemberton.

North Midland Casualty Clearing Station: The undermentioned Lieutenants to be Captains: Montague Dixon, David D. McNeill, Vincent A. P. Costobadie, George W. M. Andrew, James H. Thomas, and William T. Wood.

South Midland Mounted Brigade Field Ambulance: To be Captains: Lieutenant Alexander Leggat and Lieutenant Donald Buchanan.

South Midland Field Ambulance: Major Francis J. Warwick, from East Anglian Casualty Clearing Station, to be Major. Captain Donald Buchanan, from South Midland Mounted Brigade Field Ambulance, to be Captain.

East Anglian Field Ambulance: The undermentioned Lieutenants to be Captains: James Arthur, Alexander Cuff, and Edward K. Goodwin.

West Riding Field Ambulance: Captain George E. St. C. Stockwell, West Yorkshire Regiment, to be Captain, and Captain Harry W. Shadwell, from Attached to Units other than Medical Units, to be Captain. The undermentioned Lieutenants to be Captains: Basil Hughes, Harry Lee, John C. Metcalfe, Frank Wigglesworth, Hugh R. Partridge, John Pinder, Samuel S. Greaves, Francis W. Begg, Charles N. Smith, Hartas Foxton, William B. Allen, Robert A. Stark, John P. Mathews, Donald S. Twigg, and William T. D. Mart.

London General Hospital: The undermentioned Lieutenants to be Captains: John Everidge, Henry P. Ashe, George W. Shore, Charles E. H. Milner, David E. S. Davies, Arthur F. Comyn, and Charles E. W. McDonald. William King Churchouse to be Lieutenant.

North Midland Mounted Brigade Field Ambulance: Major Arthur C. Goodwin to be temporary Lieutenant-Colonel. Captain Thomas George Buchanan to be temporary Major.

Welsh Border Mounted Brigade Field Ambulance: Gerald Douglas Newton to be Lieutenant.

Southern General Hospital: Harold Beckwith Whitehouse (late temporary Lieutenant, Royal Army Medical Corps) to be Captain, whose services will be available on mobilisation.

South-Western Mounted Brigade Field Ambulance: The undermentioned Lieutenants to be Captains: Philip S. Martin and Joseph Grant-Johnston.

Home Counties Field Ambulance: Major (temporary Lieutenant-Colonel) Antony A. Martin relinquishes his temporary rank of Lieutenant-Colonel on alteration in posting. The undermentioned Lieutenants to be Captains: Robert R. J. Holmes, William B. Keith, Charles H. Gregory, Duncan M. Johnston, Charles W. Greene, James W. Cairns, Frank Scroggie, Alexander H. Brewer, Henry W. Wier, and Alfred E. L. Devonald.

East Lancashire Field Ambulance: The undermentioned Lieutenants to be Captains: Gerald G. Wray, Stanley Hodgson, Henry E. Fox, George R. Hitchin, and Wilfred E. Rothwell.

West Lancashire Field Ambulance: Captain Ernest Knight to be temporary Major. The undermentioned Lieutenants to be Captains: William R. Pierce, John F. Roberts, James H. Rawlinson, George C. King, Herbert E. Marsden, Frank Hauxwell, Robert D. B. Frew, Harry Middleton, Adam A. Turner, Gilbert W. Rogers, and Walter R. Stephen. John St. George Wilson to be Lieutenant.

Wessex Field Ambulance: Captain Richard Eager to be temporary Major. Captain John G. Macindoe, from the Devonshire Regiment, to be Captain. The undermentioned Lieutenants to be Captains: Robert Burgess, Edmond L. Meynell, and Henry W. Spaight.

Northumbrian Field Ambulance: The undermentioned Lieutenants to be Captains: Ronald G. Badenoch, Francis Metcalfe, Roger Errington, Hubert Shield, John H. Barclay, Alexander C. C. Lawrence, William M. Wilson, Valentine H. Wardle, William Smith, Thomas W. Crowley, William C. Stewart, George H. Watson, and Arthur C. M. Savege.

Welsh Field Ambulance: The undermentioned Lieutenants to be Captains: Donald Macaulay, Edward B. H. Hughes, Henry Mills, Alexander E. Mackenzie, John S. Tomb, John P. H. Davies, Joseph Carroll, Arthur C. Hincks, William T. P. Meade King, Henry N. Collier, Frederick Tooth, and Frederick W. Brunker. To be Lieutenant: O'Connell Sullivan.

Sanitary Service: Major Charles E. Humphreys to be Lieutenant-Colonel.

London Sanitary Company: Lieutenant Sidney H. Daukes to be Captain.

Lowland Divisional Sanitary Section: Lieutenant Thomas J. Mackie to be Captain.

Northumbrian Divisional Sanitary Section: Lieutenant Sydney J. Clegg to be Captain.

Northumbrian Casualty Clearing Station: The undermentioned Lieutenants to be Captains: Arthur Sutcliffe, Robert R. Lishman, Charles F. M. Saint, and Richard W. Swayne.

Attached to Units other than Medical Units.—Temporary Major Antony A. Martin, from Home Counties Field Ambulance, to be Major (temporary). The undermentioned Lieutenants to be Captains:—Harry W. Shadwell, George H. H. Manfield, Harold D. Lane, John L. Green, Maurice H. Barton, George A. Brogden, William Dale, Joseph W. Scott, Frank R. Armitage, Robert E. T. Tatlow, John G. Cooke, William E. Falconar, James P. N. Casey, Eliezer Coplans, Henry C. C. Hackney, Archibald C. Haddow, Archibald Hamilton, William L. R. Wood, Gerald F. Carr, John S. Hall, Frank H. C. Watson, Sidney Scott, James A. Stenhouse, James A. C. Scott, James Anderson, John E. Brydon, Thomas R. W. Atkins, Hugh B. Cunningham, Josiah Walker, Alfred E. Delgado, John C. Marklove, David A. R. Haddon, Stanley Southam, James H. Crane, John S. Clarke, John J. Porter, and Harry M. Soden. Lieutenant William M. Cox, from South Midland Casualty Clearing Station, to be Lieutenant.

JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

The current issue of this journal is dated June and ends Vol. XXIV. Major (now Lieutenant-Colonel) D. Harvey begins, under the title of "The Causation and Prevention of Enteric Fever in Military Service, with Special Reference to the Importance of the Carrier," an account of the work done at Naini Tal Enteric Depôt, 1908–11. In a joint paper on Observations on Six Hundred and Eighty-five Cases of Gas Poisoning by Noxious Gases used by the Enemy the authors, Lieutenant J. Elliot Black, Lieutenant Elliot T. Glenny, and Lieutenant J. W. McNee, state that while the acute asphyxial cases did not satisfactorily respond to treatment, the subacute type responded well, frequent administration of ammonium carbonate in full doses giving relief, although cough was distressing. Colonel Sir Wilmot Herringham, in a note to this paper, expresses the belief that suitable respirators properly used will almost entirely stop the occurrence of severe cases. He calls attention to the use of atropine in the prevention of œdema. Captain Gordon Ward gives details of a suggested form of organisation of convalescent camps, his remarks being based on experience at the first camp for convalescent soldiers set up in this country—namely, at Eastbourne. The suggestions apply more particularly to a camp of not less than 3000 beds. Colonel H. M. W. Gray has a short article on Treatment of Gunshot Wounds by Excision and Primary Suture, and Surgeon-Colonel R. J. Reece contributes Notes on the Prevalence of Cerebro-spinal Fever among the Civil Population of England and Wales during the Last Four Months of the Year 1914 and the First Six Months of the Year 1915; together with a short account of the appearance of the disease and of its distribution among troops in the British Isles during the same period and of the military administrative measures adopted to deal with the prevalence of the disease.

The King has given temporary Captain Francis Charlesworth, R.A.M.C., authority to wear the Insignia of the Second Class of the Order of the Brilliant Star, which has been conferred upon him by His Highness the Sultan of Zanzibar.

Dr. Alfred Francis Street has been promoted Esquire (from Honorary Serving Brother) in the Order of the Hospital of St. John of Jerusalem in England.

Correspondence.

"Audi alteram partem."

THE FUNCTIONAL DISORDERS OF THE VEINS.

To the Editor of THE LANCET.

SIR,—In THE LANCET of Sept. 25th, under this title, Dr. Harry Campbell, in making some remarks on the subject of the causation of cyanosis, opens a very interesting subject. Dr. Campbell remarks:—

> ..... How are we to explain the fact that a hand affected by vaso-motor cyanosis tends to remain cyanosed when raised? or the fact that a localised cyanosis of the nose, lips, or ears persists when the head and trunk are erect? How, except on the assumption that the blood is imprisoned in the transparent vessels of the skin by spasm of the vessels distal to them?

From this train of argument I would dissent in one particular. It appears to me that a "localised cyanosis of the nose, lips, or ears" may certainly be due, even in the erect position, to other factors than venular spasm. It is, of course, admitted that the blue colour itself depends on the colour of the blood transmitted through vessels and variously modified in tint in the process. Now suppose that the vessels in these situations are either more abundant or the tissues around them more transparent than in other parts of the body, would not the colour be modified accordingly? It would be easy to imagine a state in which the whole blood was so slightly altered from the normal that the blue colour only appeared in these situations, and appeared in them only because of local transparencies. That this is actually and frequently the case is very strongly suggested by the following considerations:—

1. That even the normal red blood is more apparent, as shown by the more vivid tint of the skin, in just these situations.

2. That in terminal cases of heart disease these situations are more cyanosed to the eye than others.

3. A most interesting case was that of sulphæmoglobinæmia reported by Haldin Davis in THE LANCET and by Mackenzie Wallis in the *Quarterly Journal of Medicine* (I am not at the moment in a position to verify the references). I was very kindly allowed to see this case on more than one occasion. The blue colour was localised to ears, hands, &c., although there was no doubt of the condition being sulphæmoglobinæmia, and therefore, so far as we can judge, an affection of the general blood stream.

4. Although one cannot speak from personal experience, it seems more than probable that the cherry-red colour of coal-gas poisoning, which we know to be due to the formation of carboxyhæmoglobin, is also more apparent in the ears, &c.

In all these cases one can explain the whole anomaly of localised cyanosis or redness (the problem is the same for both) without invoking venular spasm, which would indeed seem to be a rather unnecessarily far-fetched explanation. It may be noted that the colour of the nails is still more a case in point. One can call to mind several cases (and I have notes of some of these), especially among the insane, in which the nails only showed cyanosis. Surely one cannot suppose on the evidence a localised spasm of the venules draining the nail-bed?

Thus, while I am quite in accord with Dr. Campbell in thinking that cyanosis known to be of vaso-motor origin must involve venular spasm, I am far from agreeing that most cases of cyanosis are vaso-motor. It is possible that I am unwittingly misrepresenting his argument. If this is the case, I tender my apologies, but it does appear that the question of increased local transparency (or increased number of blood-vessels) has to some extent escaped his attention.

I am, Sir, yours faithfully,

Lydd, Sept. 27th, 1915. GORDON WARD.

AN AMENDED MEDICAL CURRICULUM.

To the Editor of THE LANCET.

SIR,—Your correspondent "National Stress," whose letter appeared in your issue of Sept. 25th, would, no doubt, receive much support from medical students for his proposal that diplomas in medicine should be granted without examination during the continuance of the war. He can hardly however, expect to gain the adhesion of the General Medical Council. The examining bodies might possibly see their way during the war to recognise, as an integral part of the procedure for conferring diplomas, the graded results of the signing up by the authorities of the medical schools for the practical work that has been carried out in the wards and laboratories. This suggestion has often been made in pre-war times, and Sir William Osler has told us that the system is in successful operation at the Johns Hopkins Medical School in Baltimore. It would provide a much better guarantee than is now provided by examination only of the fitness of the successful candidate to enter at once upon responsible military duties. If adopted in war-time it would almost certainly be continued after peace was declared. But no scheme of this sort would increase the actual supply of doctors. It might ensure that those who had really gained practical experience would be qualified a little earlier, and that those who had not might be sent back to get it.

The narrow door to medicine which I hinted in a recent letter to THE LANCET might have to be widened is obstructed not by intellectual but by financial barriers. There are large numbers of young men well fitted by character and preliminary education to join our profession who are permanently excluded by want of means. In a recent Students' Number of one of the medical journals it was stated that no parent should enter his son for medicine who was not prepared to spend at least a thousand pounds upon his education. If the dearth of doctors which threatens the nation after the termination of the war is to be prevented, some means must be found to make it possible for parents less well endowed than this to send their sons into medicine. A large number of medical men are laying down their lives for their country, and not a few of these are leaving behind them sons, who, had their fathers lived, would almost certainly have entered the profession. No more fitting recognition of the patriotism of these men could be devised than the provision of free medical education for their sons. Whether a fund for this purpose be provided by the State or by private effort, it would serve the double purpose of marking our gratitude to the medical men who have fallen on the field of battle, and of tending in some measure to lessen the threatened depletion of the ranks of the profession.

I am, Sir, yours faithfully,

London, W., Sept. 27th, 1915. LAURISTON E. SHAW.

THE PATHOLOGY OF TRENCH FROST-BITE.

To the Editor of THE LANCET.

SIR,—I have read with much interest in THE LANCET of Sept. 11th, the article by Professor J. Lorrain Smith, Professor James Ritchie, and Dr. James Dawson, on the pathology of trench frost-bite. Considering that Sir Lauder Brunton states that thyroid extract is an efficient remedy in chilblains, I suggest that experiments on animals similar to those described in the above article be carried out on animals fed, previously to or during the experiments, on thyroid extracts. If the results were satisfactory the effects of thyroid might be tried on those of our soldiers who, through special circumstances, were exposed to cold for an unduly long time. This may have been tried before, but I have no knowledge of it. I should have preferred to carry out some experiments myself before putting forth this proposal, but I have no facilities for doing so in this country. The problem of combating and preventing "trench feet" is, however, of such importance that I venture to make the above suggestion in the hope that in conjunction with other prophylactic measures it may help to ameliorate the lot of thousands of our men exposed to the horrors of war.

I am, Sir, yours faithfully,

Madrid, Sept. 17th, 1915. A. G. GRAY.

NERVOUS FURRING OF THE TONGUE AND DISTURBED TASTE.

To the Editor of THE LANCET.

SIR,—I was much interested in Sir James Goodhart's article on this subject in your issue of Sept. 25th. The whole subject of furring of the tongue is very ill-understood and well worth discussion in the columns of THE LANCET.

Everyone will agree with Sir James Goodhart that, despite the popular belief to the contrary, furring of the tongue is not necessarily an indication of gastric derangement. In some persons it appears to be a constitutional peculiarity, analogous to a pasty skin (with which it is often associated) and due to the same cause—an undue thickness or slow shedding of the epithelium.

Like Sir James Goodhart, I have often been struck by the frequency with which a furred tongue is met with in nervous people, and I think it was King Chambers who many years ago spoke of "the white tongue of the nervous patient." I have also noticed that such patients often have atonic splashy stomachs, and that anything which promotes gastric atony seems also to increase the furring of the tongue. Fatigue and depressing emotions are prominent amongst such causes, and one of my patients tells me that he always gets a furred tongue if his work keeps him out of bed all night, another that his tongue immediately becomes furred if he is worried, and a third that he gets a dirty tongue if he drives his motor-car.

A possible connecting link between nervous furring of the tongue and gastric atony may be found in the sympathetic system. Over-action of the sympathetic depresses gastric tonicity and increases the "sympathetic" saliva which is viscid and rich in mucin in proportion to the more watery saliva which is secreted under the influence of the cranial nerves. The washing of the mouth and tongue is thus rendered less efficient, and dead epithelium is apt to accumulate on the lingual papillæ. There is no doubt, on the other hand, that derangements of the colon do lead to furring of the tongue, although the connexion between the two conditions is very difficult to explain. Thus a patient of mine had a perfectly clean tongue until an attack of acute diarrhœa some years ago, since when it has always been furred. Another patient told me that she dated the appearance of fur on her tongue from a feverish cold four years previous to my seeing her. For this she took a large dose of castor oil which made her very ill and brought on violent diarrhœa, and her tongue has never been clean since. In another patient furring of the tongue coincided with an attack of acute appendicitis, and has remained permanent in spite of the removal of the appendix.

Curiously enough, an acute illness may have the contrary effect of causing a furred tongue to become permanently clean. Thus an old gentleman of my acquaintance states that his tongue was always furred until an attack of acute pneumonia in middle life which confined him to bed for some weeks. When he got up his tongue was clean and has remained so ever since.

I am, Sir, yours faithfully,

ROBT. HUTCHISON.

Queen Anne-street, W., Sept. 25th, 1915.

A SUGGESTION FOR THE TREATMENT OF SEA-SICKNESS.

To the Editor of THE LANCET.

SIR,—We were in the Bay of Biscay *en route* for Calcutta, and after taking my morning bath I was attempting to shave, but had to desist on account of an attack of mal de mer. In this dilemma I bethought me of a specific for sickness which had never failed me on land, and which I had often longed to try for mal de mer when at sea. I therefore made up the following mixture:—

℞ Liq. iodi fort.
Acid. hydrocyan. dil. } āā ℥ xii.
Aquam ad ℥ vi.,

of which I took one ounce every ten minutes.

After taking three doses an irresistible sensation of sea-sickness took possession of me, and I found that the salivary glands were in a state of intense activity, and immediately I was gulping down gushes of saliva. Shortly this came to an end, and after taking another dose of mixture I was able to resume my shaving quite comfortably. I then took an ounce of "Black Jack" or Mist. sennæ co., and took a light breakfast of tea and dry toast.

In order to counteract the anorexia resulting from mal de mer I prescribed for myself the following mixture:—

℞ Potassii bromidi ℥ i.
Acid. hydrochlor. dil. ℥ iii.
Liq. strychninæ ℥ i.
Tinct. gentianæ co ℥ iii.
Spt. chloroformi ℥ i.
Aquam ad ℥ vi.,

of which mixture I took half an ounce in water five minutes before meals.

For lunch I had soup and toast, but at night was able to do justice to the following menu:—

Consommé chiffonade. Turbot sauce Hollandaise.
Hanche de mouton.
Filets mignons Parisiens. Grouse salade.
Macedoine de fruits. Biscuits Napoli.
Dessert. Café.

On the same day I was able to test the efficacy of my treatment on two of the passengers—a lady and her husband—and they both assured me that they derived absolute relief, and next day I gave it to a lady who had been ill for three days and she derived similar benefit. These were the only passengers who applied to me for treatment, and as it was effectual in their cases as well as my own, I think I am justified in regarding it as a specific for mal de mer.

The treatment, as I understand it, resolves itself into three distinct actions:—

1. Sedative. In mal de mer the whole of the nervous system is in a state of intense irritability and the functions of the chylopoietic organs are in abeyance. The oscillations of the ship cause a loss of equilibrium in the semicircular canals and vertigo, and through stimulation of the sympathetic-vagus arc reflex vomiting. A sense of intense misery and distress followed by collapse is due to suppression of the hormones. Anorexia quickly gives rise to marasmus, and if this is unrelieved death ensues. The iodine-hydrocyanic mixture acts as a sedative to the nervous system, checking vertigo; obtunds the vicious circle of the reflex arc, stopping emesis; and promotes the secretion of the hormones, thereby restoring digestion.

2. Aperient. The best of all aperients is compound senna mixture, and I was glad to see that there was quite a large supply in the dispensary. The misery of a large proportion of cases of mal de mer is accentuated by a history of constipation, and it is always wise to administer a cathartic in these cases.

3. Tonic. The treatment of mal de mer is not complete without the administration of a digestive tonic. A little bromide allays the irritability of the gastric mucous membrane; dilute nitro-hydrochloric is the most efficient hepatic stimulant; solution of strychnia, brain and spinal cord stimulant; compound tincture of gentian promotes the flow of gastric juice; and spirit of chloroform forms a pleasant vehicle for the administration of the mixture.

It is a great mistake to decry the efficacy of drugs, and I am fully persuaded that in no case shall we be more rewarded by the gratitude of our patients than in the successful treatment of mal de mer.

I am, Sir, yours faithfully,

A. HERBERT HART, M.S., M.D.Durh.,
M.R.C.S., L.R.C.P. Lond.,
Surgeon, P. and O. S.N. Co. ss. *Nyanza*.

*** Every apparently successful treatment of sea-sickness is worth recording, but nothing like specific remedy can be claimed where only a very small number of cases are in question.—ED. L.

AN ANTISEPTIC HÆMOSTATIC.

To the Editor of THE LANCET.

SIR,—Some months ago we published a short account of the use of tissue juice or thromboplastin as a hæmostatic. In this preliminary paper it was shown how remarkably effective this preparation had been in cases of hæmophilia where applications and injections of serum and of various other hæmostatic substances had failed to check the hæmorrhage. Since this time the thromboplastin has been used in numerous clinics in this city in the course of operations. It has been employed on an extensive scale by the physicians of the Department of Health following the removal of tonsils. The reports from various sources have been so favourable that we feel encouraged to bring thromboplastin to the attention of those who are concerned with the treatment of wounds of the soldiers at the front. When used for this purpose it possesses the added advantage of being an antiseptic, as it contains 0·3 per cent. trikresol. If it appeared desirable, the amount of trikresol could be increased. Naturally, no hæmostatic will be able to staunch the bleeding from the larger arteries, and it is not for this class of wounds that the tissue juice is recommended, but rather as an application for contusions or tears of the soft parts to which it might be applied as a first dressing.

The preparation of thromboplastin is simple and inexpensive. It is prepared as follows: ox brains are obtained fresh from the slaughter-house, stripped of their membranes, washed in running water, and weighed. They are then passed through a meat-chopping machine three times, and an equal amount of normal salt solution is added. This suspension is allowed to remain in the refrigerator for 48 hours, and it is then twice pressed through cheese cloth. This extract, which contains fine suspension of tissue in addition to tissue juice, is diluted with one-half its quantity of salt solution. Trikresol is then added in proper proportion so that the finished preparation contains 0·3 per cent. Aerobic and anaerobic cultures of this fluid have repeatedly been found sterile. It maintains its hæmostatic potency for many months.

I am, Sir, yours faithfully,

ALFRED F. HESS, M.D.
Research Laboratory, Department of Health,
New York City, Sept. 19th, 1915.

A "NEW SIGN" IN PULMONARY DIAGNOSIS.

To the Editor of THE LANCET.

SIR,—I regret that my absence from town has caused delay in replying to Dr. Clive Riviere's letter in your issue of Sept. 11th, and I trust you will now kindly afford me an opportunity of doing so.

With reference to Dr. Riviere's strictures concerning my "recollection" of Abrams's work and as to my being "demonstrably wrong" unless I "can bring forward any further work of Abrams that goes beyond the facts" as stated by Dr. Riviere, the best thing I can do is to quote verbatim certain passages from Abrams's writings. Dr. Riviere's facts as regards Abrams's work go but little beyond the small circular areas of atelectatic character. Now it is true that Abrams frequently depicts his dull areas of lung contraction in the form of small circles, but these often merely indicate the centres of the dullness, and I may perhaps be permitted to suggest that Dr. Riviere has not had access to all Abrams's work. For instance, referring to the dull areas over the apices, described by Dr. Riviere, the following quotation from Abrams is *apropos*:—

> Even in the norm, certain portions of the lung are collapsed, and deprived of sufficient air to yield a dullness and, in some instances, a flatness on percussion. Not infrequently the apex of the lung in its entirety may be atelectatic, and for this reason alone some individuals have been pronounced phthisical.[1]

Again, Dr. Riviere complains that he alone has elicited the dullness over both front and back when percussing at one point only. But to quote again from Abrams:—

> This reflex (i.e., the reflex of contraction) may be elicited from the vertebral region, so that both lungs are brought simultaneously into a condition of contraction.

[1] Spondylotherapy, p. 200.

And again:

> Dullness may be elicited in practically any chest region by using a plexor and pleximeter.[2]

It seems certainly rather curious that Dr. Riviere should allege that Abrams's areas bear no relationship to his in position, size, shape, &c., even in regard to those small areas described by Abrams which are known to Dr. Riviere. With regard to the posterior band of dullness described by Dr. Riviere, as a matter of fact, Abrams's posterior circles are placed just over the angles of the scapulæ, and it would be rather a difficult feat to locate them much nearer to certain of Dr. Riviere's shadings, while as regards that portion of the band described by the latter from about the fifth to the seventh dorsal spines, Abrams has the following statement:—

> It must be recalled, however, that the region corresponding to the fifth dorsal vertebra is normally dull, the dullness extending for a short distance on either side.[3]

This, together with the circular areas just alluded to, pretty well fulfil Dr. Riviere's conditions.

Dr. Riviere seems anxious to separate the reflex of contraction from the atelectatic zones. But it is impossible to do so. The dull areas described by Dr. Riviere are in fact "atelectatic" zones, and this particular form of atelectasis appears, under all circumstances, to be due to the action of the reflex in question. To support this suggestion would take up too much space. It may be sufficient to indicate that the atelectatic areas resulting from defective ventilation found in normal lungs may be due to the reflex being induced by metabolic products resulting from the defective gaseous exchanges. This is in accord with Dr. Riviere's own theory of the reflex being induced by the presence of pulmonary tubercle.

I am, Sir, yours faithfully,

Harley-street, W., Sept. 24th, 1915. A. G. AULD.

TREATMENT OF SCORPION STINGS.

To the Editor of THE LANCET.

SIR,—I have read Sir Lauder Brunton's letter in THE LANCET of July 24th on the subject of scorpion stings, and note that he suggests treatment by permanganate of potash. From personal experience I can endorse the statement that the pain caused by a scorpion sting is severe. The idea one gets is that a red-hot knitting needle has been driven into the affected part, and in addition there is the feeling that electricity is being discharged from the needle into the tissues. If feasible, proximal ligature and immediate scarification round the sting, followed by the rubbing in of permanganate of potash, gives the greatest relief. If permanganate is applied quickly swelling does not occur, the pain quickly subsides, and the patient feels nothing more than a slight degree of stiffness in the affected part for a few hours. If untreated, scorpion stings often cause great swelling and œdema, sometimes followed by sloughing, as well as considerable constitutional disturbance. The same procedure is successful in the case of stings from hornets, and if one habitually carries a snake lancet the permanganate treatment can be carried out without any delay.

I am, Sir, yours faithfully,

Hartley, Rhodesia, August 31st, 1915. A. J. MACKENZIE.

[2] Spondylotherapy, pp. 299-300.
[3] Ibid., p. 80.

A GREEN BACKGROUND FOR THE OPERATION AREA.

To the Editor of THE LANCET.

SIR,—Sir Berkeley Moynihan's letter to THE LANCET of Sept. 18th, in which he advocates the use of green towels, interests me very much since I have used for the past five or six years pale-blue towels for operations in private. My object was not to rest the eyesight, although I agree with Sir Berkeley Moynihan that white towels certainly make the operation wound relatively darker. To realise this, one has only to recall a cystoscopy in a sunlit bedroom with a bad blind—a very feeble affair.

My aim, however, was a very practical one—to distinguish at a glance between my own sterilised towels and those of other people, of which there is always a profusion in private houses before operations, and none of which one ever uses. I found further that the blue colour had on strange nurses a distinctly inhibitory effect and kept unsterilised people away from the operation area. One's instructions to unsterilised assistants (whose help in their proper capacity is often more valuable than that of sterilised ones in private) are so simple—to "avoid anything blue." The only forcible criticism one can make of blue or green towels is that nurses who have had to wash them at night say they look darker, and it is a little difficult to be certain of having got rid of all the blood stains. Light Cambridge blue, however, solves this difficulty.

I am, Sir, yours faithfully,

Liverpool, Sept. 23rd, 1915. FRANK JEANS.

TINCTURE OF IODINE AND CALOMEL IN TYPHOID FEVER.

To the Editor of THE LANCET.

SIR,—The question as to the best treatment of typhoid fever is not settled yet. Hard-and-fast rules for its treatment have not been laid down, and therefore I hope the few remarks which I am going to make on the treatment of enteric fever will not be superfluous.

I would first of all draw attention to the letter of Dr. D. Walsh in THE LANCET of May 10th, 1913, concerning the treatment of typhoid fever by tincture of iodine. During the late South African War I tried tincture of iodine in about a dozen cases with undoubtedly good results. Again trying it during the same war in other cases I noticed that the effect of this remedy was not so favourable by far as in the former cases. I was wondering why such a discrepancy should have occurred, and it struck me that while for the first cases I had used a tincture which had been put away in my surgery for more than a year, to the latter patients I had given a freshly made tincture. An *old* tincture of iodine, regularly taken by an enteric fever patient, manifests its beneficial influence on the disease in so much that the patient's general state improves and he gets brighter, and at the same time the mucosa of his mouth and tongue loses its dryness and gets wet and clean, whereas the freshly made preparation of the tincture of iodine does not seem to possess such healing properties. This difference in the working of an old and a freshly made tincture of iodine could only be explained in such a way that an old tincture, put away for a considerable time, is no more a simple solution of iodine, or of iodine and potassium iodide in alcohol; as on

long standing of this tincture dissociations and new chemical combinations occur in it, and it contains now new chemical substances which it did not contain when fresh. Through the presence of these new chemical compounds in the solution the tincture itself gets quite soluble in water, whereas a freshly prepared tincture does not dissolve in water. Neither must we omit the important fact that the new different chemical compounds of the iodine, which are present in an old tincture but not in a fresh one, are of a more or less unstable character, are apt to dissociate easily, as well as to combine with other molecules, so that when we administer to an enteric fever patient an old, soluble tincture of iodine, we first of all give him a drug which gets easily absorbed by his alimentary tract, and secondly, we introduce by it into the patient's system several unstable chemical compounds of iodine; the latter, through that same instability, easily decompose in the patient's system with the freeing of pure iodine in the nascent condition.

Some observers have from the use of tincture of iodine in typhoid fever seen good results, whereas others had to give it up as being useless in this disease; evidently the first category of observers must have worked with an old, perhaps many years old, tincture, whereas the others have probably been using fresh tinctures.

Many have used, and are still using, calomel in certain phases of this disease. Personally, I am in favour of the use of calomel in typhoid fever, but only if given according to the rules of the late Professor Zakharine, of Moscow. Zakharine's method is as follows. If we get an enteric fever patient during the first eight days of the illness, it is commendable to prescribe for him calomel in small frequent doses—say, from half to one grain every hour, until his bowels have freely and copiously moved for at least five or six times, for which, as a rule, about 10 to 12 grains of calomel are required, and the more he gets purged in this way the better for him. Should the evacuations, after the intake of 10 to 12 grains of calomel in small doses, not be satisfactory as to their number or quantity, then a sufficient dose of some saline purgative must be administered to him. In many cases, after a thorough cleansing of the bowels in this way, a great improvement in the whole condition of the patient with a fall of temperature is noticed. Often even the disease gets really cut short. If after the use of calomel and salts in the way mentioned the patient does not improve, or if his bowels have not been thoroughly evacuated for at least five or six times, a second series of this treatment is to be repeated in the same manner next day or the day after; but if we get a typhoid fever patient after about eight or ten days of the commencement of the fever, this sort of calomel treatment will not prove of much value to him, although one cleansing dose of calomel may do him no harm. This way of calomel treatment of enteric fever is known in Russia under the name of Zakharine's method, and very good results have been obtained by it, even cutting short of the disease being not unusual, a fact which I can corroborate.

After a successful or unsuccessful administration of calomel I recommend the regular use of an old tincture of iodine throughout the whole duration of the disease, although in the majority of cases I give after the calomel moderate doses of lactophenin. Together with the administration of calomel, frequent rinsing by day and night of the patient's mouth with a 2 per cent. solution of chlorate of potash should be started at once and continued with up to the time of convalescence. To keep the mouth of the patient in a clean and healthy condition is a *sine quâ non*.

I am, Sir, yours faithfully,

Isledon-road, N., Sept. 21st, 1915. S. ZAVADIER, M.D.

*** The point raised as to a marked difference appearing between the therapeutic action of a freshly prepared tincture of iodine and of an old preparation is interesting, as it is well known that after a time the oxidising action of iodine on alcohol asserts itself. There have been found in old tinctures of iodine, for example, aldehyde, hydriodic acid, acetic acid, and ethyl acetate, while none of these occurs in the fresh preparation. It would seem that in administering old tincture the iodine would be largely transformed into hydriodic acid. This possibly yields up its iodine in the organism readily in the elemental state, as is suggested by our correspondent.—ED. L.

INCREASED POSTAL RATES AND PATHOLOGICAL SPECIMENS.

To the Editor of THE LANCET.

SIR,—At present specimens of urine and fæces and pathological specimens sent to clinical pathologists for examination are paid for at ordinary postal rates for letters. When the new rates come into force very shortly the postage of such packages will entail considerable expense to the senders, as they must be sent in air-tight containers and may not be sent by parcel post. Up to about ten years ago such packages could be sent by parcel post and were obliged to be registered. Would it not be well if representations were made to the Postmaster-General pointing out the desirability of a reversion to the former practice? Perhaps some medical Member of Parliament could be induced to ask a question in the House of Commons and draw attention to the necessity of the change.

I am, Sir, yours faithfully,

Bexhill-on-Sea, Sept. 26th, 1915. A. HILL JOSEPH.

THE PLEOMORPHISM OF THE MENINGOCOCCUS.

To the Editor of THE LANCET.

SIR,—I have read with much interest the short paper by Lieutenant Alexander Lundie and others on the above subject published in your issue of Sept. 25th, and note with pleasure the fact that other workers are beginning to question the claims of the meningococcus to be considered the causal agent in cerebro-spinal fever. In a paper published in THE LANCET some months ago[1] I ventured to suggest that the true cause of this disease is a *diphtheroid* bacillus of which the meningococcus is only a phase. I for one am aware that my observations do not entirely displace the meningococcus, but I venture to think that we have now the means of relegating the meningococcus to its true place in relation to this disease, and, subject to certain modifications, I believe that the claims put forth in my paper will ultimately be substantiated.

I am especially interested in the drawings attached to the paper by Lieutenant Lundie and others, inasmuch as the organisms there depicted correspond morphologically with those which I described in June, and which I had the privilege

[1] THE LANCET, June 26th, 1915 (p. 1333), A Contribution to the Study of the Etiological Factor in So-called Cerebro-spinal Fever.

of demonstrating at a meeting of the Reading Pathological Society some time before.

I think there can be no doubt that the organism belongs to the same category as the Klebs-Löffler bacillus, and should accordingly be classed amongst the diphtheroids. This is a group very widely spread in nature, and characterised by a pleomorphism so bewildering as to suggest instability of type. In an ordinary agar culture all varieties may be encountered, from the club-shaped and kite-tailed down to the coccal members. I consider the word "segmented" much more applicable to some of the forms observed than the term "striated" suggested by Lieutenant Lundie and others, as many apparently actually undergo segmentation. This variability so characteristic of the group holds good as regards the reaction of individual members towards Gram's stain, although in young subcultures, no matter how often transplanted, the majority are still on the whole Gram-positive. Hitherto also the Klebs-Löffler bacillus has been regarded as the only member of the group practically to possess pathogenicity. Now, however, we must acknowledge that other members (if not modified Klebs-Löffler bacilli) may be pathogenic. Even in respect to pathogenicity, the Klebs-Löffler bacillus lives up to its reputation of variability, for some strains are not pathogenic or only feebly so. We know next to nothing about diphtheroids as a group, and even with regard to the familiar Klebs-Löffler bacillus there is much to be learned.

What, for instance, is the exact significance of involution forms or pleomorphism is a problem awaiting further investigation. Certain it is that in this group the appearance in cultures and in pathological fluids of so many diverse forms suggests a complex life-history or cycle of development. It is possible that the group including the Klebs-Löffler bacillus will yet have to be placed among the higher bacteria, as Lehmann and Neumann suggested. As regards epidemiology, it will probably be found that telluric and climatic conditions have more influence on the incidence of the disease than lack of ventilation, overcrowding, &c. I have frequently met with diphtheroids in the routine examination of the naso-pharynx of contacts, but have confined myself to the investigation of those derived from the blood, cerebro-spinal fluid, or pus, and I hope to publish fuller and more accurate observations than were possible in my preliminary paper.

I am, Sir, yours faithfully,

Reading, Sept. 28th, 1915. ROBERT DONALDSON.

THE DISPENSING WORK OF THE POOR-LAW MEDICAL OFFICER.

To the Editor of THE LANCET.

SIR,—There must be many senior practitioners who, like myself, are also Poor-law medical officers, and who, when the appeal came from the War Office through the War Emergency Committee of the British Medical Association, willingly agreed to take up again the work of their younger days to release their junior partners and allow them to take commissions in the Royal Army Medical Corps for the war.

The tax on us both physically and financially will be heavy if we have to do our own dispensing and find the drugs at war prices. By the National Insurance Act the Government established the principle of writing prescriptions to be dispensed by chemists and paid for by the Insurance Committees, and I suggest that representation be made to the Local Government Board, pointing out what a great help it would be to the Poor-law medical service if a general order was made that Poor-law medical officers should be relieved of that part of their contracts which requires them to provide their own drugs and do their own dispensing. This request should be made through the medical press and by a deputation to the Local Government Board if need be.

The profession has responded to the demands made upon it in a way which has met with the approval of all classes, and I feel confident that my suggestion has only to be made to the authorities for them to recognise that it is reasonable, practicable, and in the interests both of the sick poor and of the Poor-law medical officers.

I am, Sir, yours faithfully,

LOCKHART STEPHENS.

Emsworth, Hants, Sept. 27th, 1915.

FLINTS AND "FOREIGN BODIES."

To the Editor of THE LANCET.

SIR,—"This bed is the fairy cave under Peniston Crag, and you are gathering elf-bolts to hurt our heifers." So speaks the primitive survival or maniacal degenerate who is the heroine of Emily Brontë's "Wuthering Heights." Elf-bolts or elf-stones are flint arrow-heads, such as were manufactured in Grime's Graves, your allusions to which last week prompt this letter. The belief that they were shot by fairies in mid-air at cattle, who then died of some cattle disease, probably lingers here and there in remote mountain regions in the north of England, Wales, Ireland, or the Scottish Highlands. Writing in 1857, the late Sir William Wilde describes the procedure when "elf-shot" cattle have been found moribund in some field in Ireland, probably near Moytura, of which this famous oculist was the historian. "When cattle are sick," he writes in the "Catalogue of the Museum of the Royal Irish Academy," "and the cattle doctor, or fairy doctor, is sent for, he says the beast has been 'elf-shot,' or stricken by fairy or elfin darts; and he forthwith proceeds to feel the animal all over; and, by some legerdemain, contrives to find in its skin one or more poisonous weapons, which, with some coins, are then placed in the water which is given it to drink; and so a cure is said to be effected."

Here we have a fairly exact parallel to the procedure of savage medicine-men when dealing with their human patients. Savages as widely apart as Eskimos and the Australian blacks—indeed, savages in all parts of the world—are prone to attribute disease to a stone or other foreign body being introduced through witchcraft into the vital organs of the sick by someone at a distance. It is the function of the good medicine-man not only to localise the foreign body, but also its introducer. One of the most interesting of the cinematographic views taken by Professor Spencer in Australia represents a group of natives marching up and down a grassy plain in a compact mass, and endeavouring thus to screw up their courage for an attack on a member of a distant tribe, who has been marked down by their own medicine men as the instiller of "bad medicine" into the body of one of their own tribe. The man had died and the medicine-men had been sure of the cause of death. They had by legerdemain extracted something from his body, which one would like to think was a flint arrow-head kept for the purpose by the faculty.

Flints, the use of fire, language, the art of the medicine-man, totemism, the horror of incest—these form perhaps the oldest culture-complex. It is certainly infinitely older than the recent and historical culture-drift known as the Heliolithic, which dates from the days of the Egyptians, of Homer, King Solomon, and the Firbolgs of Ireland. The oldest culture-complex was, doubtless, common to the man of Piltdown and to the man of Talgai, a Queenslander of the pleistocene period, whose skull now re-emerges in the councils of the ethnologists. The young man of Talgai, whose skull was found in a fossilised state some 30 years ago, was alive when Europe was under ice. It is possible that in time other skulls similar to his and to that of Java will be discovered in all parts of the globe. And then it will necessarily be asked: How were these earliest men dispersed? From what centre did they emanate? And what was the content of their knowledge?

Mexico has been shown by Professor Elliot Smith, following Professor Tylor, to have possessed a Japanese Buddhist theory as to man's future state. But whence came the knowledge of flint weapons to ancient Mexico or to the men of Grime's Graves? Whence had they the rudimentary notion of disease as the result of foreign bodies?

I am, Sir, yours faithfully,

Sept. 26th, 1915. VICTOR G. PLARR.

THE FUTURE OF INTERNATIONAL CONGRESSES.

To the Editor of THE LANCET.

SIR,—With regard to the presence of German savants at future international medical congresses, the unutterable inhumanity exhibited by the Germans may well blot out the record of her undoubtedly valuable contributions to science in the past. It may be true, as Burke said, that "you cannot indict a nation," and in reality every one of us knows that all Germans do not approve of the principles or the deeds of their military and naval authorities; but all the same, the moral leprosy of such deeds will, we imagine, have infected all Germans in such a way that other nations will shun their presence. The essence of an international congress, whether medical or any other, is to bring about unity—not the unity of an impossible uniformity, but the unity which arises from the contact of one mind with another when all are anxious to learn. We ought to go to a congress conscious of our own infirmities, as most of us are able to do, but to some extent unconscious of the infirmities of others, or we shall not be in a right frame to receive the influence for good that might be exercised over us. It will be long before we shall be able to forget the German behaviour in Belgium or the German attitude towards honourable engagements.

Whether the end of the war be far off or near at hand, it is certain that after it is over the Europe of the last 50 years will wear a very different aspect, as regards political geography, from that which it has worn up to the present, but from a racial point of view the nations will not have changed. And other nations will not want Germans at international congresses, which necessarily have a social side.

I am, Sir, yours faithfully,

Sept. 24th, 1915. M.D.

Obituary.

SIR JAMES MOODY, M.R.C.S. ENG., L.R.C.P. EDIN.,

SUPERINTENDENT OF THE CANE HILL LUNATIC ASYLUM.

Sir James M. Moody was born in the county of Tyrone, Ireland, in 1853, the son of the late Fleet-Surgeon John Moody, R.N. He studied medicine at St. Thomas's Hospital, where he qualified by obtaining the M.R.C.S. Eng. in 1874, and four years later the diploma of L.R.C.P. and L.M. Edin. From the first he was interested in psychological medicine and lunacy administration. For some time he acted as clinical assistant at St. Luke's Hospital, and while there was appointed assistant medical officer at Brookwood Asylum. This position he held for six years, but in 1882, at the early age of 29, he was appointed medical superintendent of the Cane Hill Asylum, on the opening of that institution, and this position he occupied until his death.

He soon became a marked man in his branch of medicine as an organiser. For many years Cane Hill has been looked upon as a model asylum, and it is a tribute to his reputation as an administrator that no less than 15 of the medical staff which served under him became superintendents of other asylums, and one was subsequently appointed a member of the Board of Control. He was offered a Commissionership in Lunacy on two occasions, but he disliked the idea of giving up his work as a superintendent; in recognition, however, of his valuable work he received the honour of knighthood in 1909.

Sir James Moody was a prominent member of the Caravan Club and the Japan Society, an enthusiastic collector of antiques, and an authority on apiculture. His sudden death came as a great shock to the staff and to many of the patients, numbering in all nearly 3000, who were able to appreciate his kindness and feel his loss.

Sir James Moody married in March, 1885, Alice Harriet, daughter of the late Alfred Blackburne Frend, of Oaklands, Worplesdon, Guildford, who survives him.

THE PROSPECTIVE LORD MAYOR OF BRISTOL.—Mr. Barclay Josiah Baron, M.B., C.M. Edin., has accepted an invitation to become Lord Mayor of Bristol in November next.

THE EUGENICS EDUCATION SOCIETY.—The October afternoon meeting of this society will be held at the Grafton Galleries, London, W., on Thursday next, at 5.15 P.M., when Professor J. A. Lindsay will read a paper entitled "Eugenics and the Doctrine of the Superman."

SANITARY INSPECTORS' ASSOCIATION.—A meeting of the Devon and Cornwall branch of the South-Western Centre of the Sanitary Inspectors' Association was recently held at Exeter. There was a good attendance, and Mr. E. H. Quicke read an interesting paper on the Mussel Industry of the Exe. Mr. Quicke traced the industry which has been carried on at Lympstone for the past 60 years. He stated that since 1907, for the protection of the shell-fish from contamination by sewage outfalls, a system of "relaying" had been established. This consists of removing mature mussels to a fresh cultivation area, in the centre of a high bank of sand, called "the ridge." At spring tides on this ridge the rise and fall of the river was 12 feet, and the river Exe is about three-quarters of a mile wide at this part, and Mr. Quicke thought that with proper precautions contamination was hardly possible. In consequence of unsatisfactory analyses being made in 1907, mussels were not permitted to be sent to the market unless they were "relaid." In 1912 the fishery was reopened, and remained so until 1914, since which date no mussels have been placed on the market, but in a short time, if the analysis proved satisfactory, the trade would be continued.

The War.

THE CASUALTY LIST.

THE events of the beginning of the week on the Western front have had a successful and important issue, but a price has to be paid for all victories, however carefully planned. The official casualty lists with reference to the British advance cannot be expected for some days. The conditions of the wounded arriving on this side of the Channel prove how systematic and orderly has been their treatment from front to base.

The following names of medical men appear among the casualties announced since our last issue:—

Killed.

Lieutenant J. P. Walsh, I.M.S.

Captain W. R. S. Roberts, R.A.M.C., 3rd East Anglian Field Ambulance, graduated at Birmingham in 1906, and was a tuberculosis officer for the county of Essex.

Lieutenant J. W. Parker, R.A.M.C., attached to the 11th Battalion, Manchester Regiment, was educated at Dunedin, New Zealand, and at University College, Cardiff, and University College Hospital, London. At the outbreak of war he was in practice at Merthyr Tydfil.

Died of Wounds.

Lieutenant F. J. Wisely, R.A.M.C.

Died.

Lieutenant J. McGowan, R.A.M.C.

Lieutenant T. B. Paul, I.M.S.

Wounded.

Lieutenant L. Cassidy, R.A.M.C.

Captain T. W. S. Hills, R.A.M.C., attached to the 22nd London Regiment (The Queen's).

DEATHS AMONG THE SONS OF MEDICAL MEN.

The following sons of medical men are to be added to our lists of those who have fallen during the war:—

Second Lieutenant A. D. Stewart, 9th Battalion, Royal Sussex Regiment, youngest son of Mr. H. D. Stewart, M.R.C.S., &c., of Redcliffe-gardens, London, S.W.

Lieutenant B. G. MacDowel, 1st Connaught Rangers, second son of Dr. E. C. MacDowel, of Sligo.

Captain R. W. S. Stiven, 1st Royal Scots Fusiliers, younger son of the late Dr. E. W. F. Stiven.

Second Lieutenant L. L. Treharne, 9th Battalion, Welsh Regiment, younger son of the late Dr. E. Treharne, J.P. for Glamorganshire.

Lieutenant N. Handfield-Jones, Royal Field Artillery, only son of Dr. Handfield-Jones, of Cavendish-square, London, W.

Captain L. G. Coward, 1st Middlesex Regiment, youngest son of the late Dr. Coward, of Stoke Newington.

WAR EMERGENCY COMMITTEE: A REPRESENTATION FROM MANCHESTER.

The Executive Subcommittee of the War Emergency Committee received on Monday last an important deputation representing the Manchester hospitals, who placed before the Subcommittee the difficulty in which those charities might be placed by the recent circular (W2) issued by the Committee, urging upon medical men of military age to place their services at once and unreservedly at the disposal of the War Office by entering their names upon a voluntary roll.

The views of the deputation from Manchester were succinctly stated by Sir William Cobbett, speaking, as chairman of the Board of Management, for the Manchester Royal Infirmary. This institution, he said, had 530 beds in normal times, 240 had been added for military patients, a central branch contained 60 more, and 135 extra beds had also been provided at the relief hospital, making a total of nearly 1000 beds, over 300 of which were at the disposal of the army. The range of the work, he pointed out, was indicated by the figures relating to the patients. In 1914 28,000 out-patients and 13,000 in-patients were treated. In a normal year over 20,000 cases of accident came to this hospital and about 7000 operations were performed. In normal times the work was carried on by an honorary staff of 33 and a resident staff of 23 at the infirmary, 2 at the central branch, and 2 at the relief hospital. Of the honorary staff 27 were engaged in military work, some being wholly absent on such duty, while others doing part-time work were only able to give partial attention to hospital patients. The resident staff was reduced to 8 at the infirmary and 1 at each of the auxiliary branches. The work was being carried on by senior students, but the number of these was limited. Sir William Cobbett pointed out that the work of the hospital in these circumstances was being largely carried on by the resident medical officer, the resident surgical officer, and the accident house surgeon, to whom also fell much of the clinical education of the students. These posts were held by highly tried and competent men, their tenure was often three years, and they were next in succession to vacancies on the honorary staff. If the circular of the War Emergency Committee deprived the Manchester Royal Infirmary of their services at this juncture, he considered that the difficulties of carrying on the work would be insuperable. He asked that these men might receive an intimation that their services in their present positions were so valuable that they would not be called upon. At any rate, he asked that they should receive one month or two months' notice, so that the hospital could make some arrangement. He also asked if it were not possible that the men, taking commission upon qualification, should spend three months in the hospital.

Major Wilson, R.A.M.C., chairman of the Medical Board of the Manchester Royal Infirmary, pointed out that general practitioners could not replace such resident officers as those described, upon whom much skilful and prompt operative work devolved, as the honorary staff could not get through the work and also do their duty by the big base hospitals.

Mr. W. Armitage, speaking for Ancoats Hospital, said that the honorary staff in their much smaller institution was now depleted to one physician and 2 surgeons who were already doing military work. Of their normal resident staff of 3 or 4, 2 remained. If these were taken the hospital could barely go on.

Dr. Hopkinson, treasurer of the Salford Royal Hospital, said that of the beds in the hospital, the number of which was now raised to 250, more than one-half were occupied by military patients. He suggested that the resident officers at hospitals should not receive the circulars asking them to enrol, but that they should be sent to the hospital authorities, and the resident officers should not be called up until they had served the hospitals for three months.

Captain A. Donald, R.A.M.C., professor of gynæcology and obstetrics in the Victoria University of Manchester, speaking for the St. Mary's Hospitals for Women and Children, alluded to the

size and importance of the charity, and said that of the honorary staff of 8, 4 were serving with the army, while the resident staff, normally 7, was now reduced to 2, 1 in charge of the maternity department and 1 in charge of the obstetric department. The work of these officers could not be done by general practitioners, and they required special training. To lose these officers would entail much suffering on the public.

Mr. R. S. Boddington, speaking for the Northern Hospital for Women and Children, Manchester, and Mr. H. J. Goldschmidt, speaking for the Manchester Royal Eye Infirmary, the largest eye hospital in the kingdom, both said that the difficulty of replacing resident officers was extreme.

Mr. T. Jenner Verrall, Mr. N. Bishop Harman, Major Galloway, and Mr. E. B. Turner asked various questions of the deputation, and pointed out that similar difficulties existed in London and had been to some extent surmounted. Mr. Harman said that if necessary the honorary staff of the hospitals—those that were left of them—might arrange between themselves to sleep at the hospital and do the residents' work. Major Galloway said that at hospitals to which teaching schools were attached men holding commissions and wearing uniform might be employed for a period as residents.

Mr. Turner pointed out that the resident posts might be filled successfully by old students of the hospital not of military age.

Sir William Cobbett said that he understood from something another member of the subcommittee had said that it was necessary for the newly commissioned medical officers to spend some three months in learning their military routine.

Dr. C. Buttar, chairman of the Executive Subcommittee, summed up the position of the War Emergency Committee by saying that the difficulty with regard to residents would have to be met in some places by the honorary staff becoming resident, in some by the employment of outside practitioners as half-timers, and in some by the principle of employing in succession recently qualified medical men who had already taken commissions, though this could only obtain at hospitals to which a teaching school was attached. He concluded by saying that any information or assistance which the subcommittee could afford was wholly at the service of the deputation.

Sir William Cobbett, speaking for the deputation, said that they recognised the helpful spirit in which their representations had been received. He thought that they had obtained information which would be very useful to them in their difficulties.

LIMBLESS SAILORS AND SOLDIERS.

We have received the following letter from Major-General Sir Francis Lloyd, General Commanding the London District, and Mr. C. H. Kenderdine, honorary treasurer of Queen Mary's Convalescent Hospitals, Roehampton, making an eloquent plea on behalf of the sailors and soldiers who have lost limbs in the war:—"The nation owes a special debt of gratitude to those gallant men who have lost their limbs in the war. On their behalf we make an earnest appeal for additional funds to extend the work at Queen Mary's Convalescent Hospitals, Roehampton, where these sufferers (officers and men) are provided at the expense of the State with their artificial appliances and taught how to use them. The hospitals are officially recognised by the Directors-General of the Navy and Army Medical Services and the Lords Commissioners of the Royal Hospital, Chelsea. Over 800 patients are awaiting admission, among them many men from our overseas dominions, and the numbers increase daily. To meet this difficult situation a large outlay has been incurred in the erection and equipment of new wards, which will shortly be opened. The work at Roehampton can best be judged by the results achieved and by the gratitude of these brave men on realising that, with the wonderful artificial limbs of recent invention, they will be able to obtain employment. With a view to their future employment and also to provide useful occupation for the men while in hospital, workshops fitted with model motor chassis, electrical appliances, lathes, &c., are being organised, with competent instructors. A man who has lost his right hand will be taught to write with the left, and classes for other industries will be arranged. An employment bureau working in conjunction with existing societies and employers of labour has also been established, and already a number of men have been placed in good situations. From the numerous offers received it is hoped through this medium to find suitable employment for every man on his leaving the hospital. To maintain and extend this national work a large additional sum of money is required, and we look with confidence to a ready response to our appeal from public and private sources, notwithstanding the urgency of other claims. Donations sent to the honorary treasurer at St. Stephen's House, Westminster, will be gratefully acknowledged."

We hope that our readers will give this appeal the publicity which it deserves among their patients and friends.

EXHIBITION OF FRACTURE APPARATUS.

With the concurrence of Sir Alfred Keogh, K.C.B., Director-General of the Army Medical Service, an exhibition of the various forms of apparatus that have been found most useful in the treatment of fractures met with in the war, will be held in the house of the Royal Society of Medicine, 1, Wimpole-street, W., from Friday, Oct. 8th, to Monday, the 11th, inclusive. The exhibition, as we have already announced, will be open each day, except Sunday, from 10.30 A.M. to 5.30 P.M. On Sunday, Oct. 10th, demonstrations will not be given, but the exhibition, to which visitors will be admitted on presentation of their visiting cards, will be open from 10.30 A.M. to 1 P.M., and from 2 P.M. to 5.30 P.M. On the first day the chair will be taken at 3 P.M. by the President, Dr. Frederick Taylor, and the exhibition will be opened by Sir Alfred Keogh.

The apparatus will be contributed by officers of the R.A.M.C. serving in France, and by those attached to the base hospitals in England. The principal exhibits will be brought from Boulogne by R.A.M.C. officers, who will come over for the purpose of demonstrating the use of the various appliances. Colonel Sir Almroth Wright, C.B., F.R.S., will demonstrate his most recent researches in the drainage of wounds upon each day, except Sunday, during which the exhibition is open. On the opening day he will deliver an address on the latest work in connexion with wound infection.

Surgeons of the various commands are invited to send exhibits, and officers desiring to contribute should communicate with the consulting surgeon for their command. Officers in London should

address Colonel Fagge, 3, Devonshire-place, W. The exhibition is under the management of a committee consisting of Lieutenant-Colonel Charles H. Fagge, M.S., Lieutenant-Colonel F. F. Burghard, M.S., Mr. Robert Jones, F.R.C.S., and Mr. J. Y. W. MacAlister, who is also acting as honorary secretary for the committee.

Medical men who are not Fellows of the Royal Society of Medicine will be admitted to the exhibition and to the delivery of the lectures on presenting their cards and signing their names. Firms of surgical instrument makers desiring to send representatives to visit the exhibition should apply for tickets by letter to the secretary, enclosing a stamped addressed envelope.

THE MECHANISM OF BULLET WOUNDS.

From time to time complaints are heard in Germany of the use by the British of expanding bullets of a nature forbidden in warfare by the Hague Convention. Quite early in the war some alleged confessions by captured British soldiers were published, but were easily shown on internal evidence to be impudent forgeries. At intervals since then the totally unfounded slander is repeated; and the same belief is sometimes expressed about German ammunition by British soldiers and surgeons. It is, however, important for those who see the results of bullet wounds to realise the character of modern small-bore projectiles and of their flight; and a series of articles on bullet ballistics in the August issues of *Engineering* by Fleet-Surgeon C. M. Beadnell may be read with great advantage in conjunction with two translations from German medical literature which are printed in the June number of the *Journal of the Royal Army Medical Corps*. Fleet-Surgeon Beadnell explains thoroughly all the complicated motions of translation, rotation, and pirouette of the Lee-Metford bullet, shows why it inflicts more serious wounds at very close and at long ranges than at middle distances, and demonstrates that in sundry circumstances the regulation infantry bullet may produce effects nearly, if not quite, as mutilating as those of the many varieties of "dum-dum" or expanding sporting bullet. The same dangerous qualities are possessed by the German Spitz-Geschoss bullet, as our soldiers and surgeons know to their cost; whereas the solid French bullet is distinctly less deadly than either of these two. It is probably this difference between the effects of the French and English bullets which has led several German surgeons into savage denunciations of our supposed violations of the Hague Convention by using expanding bullets: if they could spend a week in a British base hospital they would learn to be less hasty in their generalisations. Professor Kirschener is one German army surgeon (at least) who recognises these facts, and warns his countrymen against the inference that any very severe bullet wound must be due to a "dum-dum" bullet. The facts of the case are that the modern pointed bullet was introduced first by Germany and then copied in our army; that it conforms to the letter of the Hague Treaty; that it can, and frequently does, cause wounds almost as horrible as those of the bullets forbidden by that instrument. If, as the Germans suggest, our variety of this bullet is a shade more deadly than their variety—and this is by no means proved—the reason is that our bullet, as pointed out by Colonel Pilcher, is rather longer than theirs, consequently when it traverses the tissues sideways it makes a larger track than the Spitz-Geschoss in similar circumstances. It is this tendency to turn on a transverse axis as soon as resistance is encountered that constitutes the superior destructiveness of the composite German and British bullets over the solid bullet used in the French rifle.

Mr. H. F. Waterhouse is leaving England shortly for Russia, where he will act as surgeon-in-chief to the Anglo-Russian Hospital.

Mr. H. L. Eason has been appointed consulting ophthalmic surgeon to the Mediterranean Expeditionary Force, with rank of temporary Lieutenant-Colonel.

Dr. James Donelan having resigned his connexion with the French Red Cross Society as medical referee to the London Committee of the French Red Cross, has no further responsibility in regard to appointments in French auxiliary military hospitals.

Dr. W. R. Dawson, F.R.C.P. Irel., one of His Majesty's Inspectors of Lunatic Asylums in Ireland, and Dr. F. C. Purser, F.R.C.P. Irel., physician to Mercer's Hospital, Dublin, have been appointed consultants in nervous diseases to the troops in Ireland, with the rank of Major in the Royal Army Medical Corps.

VACANCIES FOR MEDICAL OFFICERS.—Two or three medical men are wanted to take commissions in the 2/1st North Midland Field Ambulance, for foreign service only. This unit is now under canvas at Watford. Applications should be made to Lieutenant-Colonel H. G. W. Dawson, Officer Commanding, Watford.

Two medical officers are urgently required for service with the 2nd Line, Shropshire Royal Horse Artillery and Cheshire Yeomanry. Pay and allowances as in the Regular Army, also outfit and camp kit grants. Full particulars can be obtained on application to Lieutenant-Colonel D. C. Leyland Orton, senior medical officer, 2nd Line, Welsh Border Mounted Brigade, The Camp, Morpeth, Northumberland.

VACANCIES IN THE SANITARY SECTIONS.—The secretary of the Royal Institute of Public Health, 37, Russell-square, London, W.C., has been requested to obtain recruits for the Sanitary Section of the 67th (Home Counties) Division. The duties performed on the field by men of a sanitary section are analogous to those performed by civil sanitary inspectors in time of peace, and men are therefore required of superior education and preferably those who have already had experience in sanitary work. If any men seeking employment meet these requirements, they should apply to the secretary of the institute.

THE BRIGHTON TERRITORIAL HOSPITAL.—The main work of the Second Eastern General Hospital, mobilised at the commencement of the war, has been to deal with the men returned from the front, but a great deal of work has been done there apart from this. The statistics of the results obtained, whether among men from the Expeditionary Force or from the camps, are most satisfactory, and reflect the greatest credit on the administrator, Lieutenant-Colonel J. A. Rooth, and his staff.

The surgical work on the men admitted from the camps has consisted mainly of operations for the cure of hernia, varicocele, varicose veins, hæmorrhoids, and various deformities of the feet, such as hammer-toe, ingrowing toe-nails, and hallux valgus. There have been in addition a good many cases of appendicitis and a few of other acute abdominal diseases and various minor surgical ailments.

The *herniæ* were nearly all of the inguinal variety, with just a few femoral. Most of the men were sent in for operation. In a large proportion very little, if any, inconvenience was caused by the rupture. The men had noticed a small inguinal swelling, coming on after heavy marching or some other excessive exertion, and had shown it to their medical officer, who had sent them to the hospital for operation, in order to render them fit to continue on active service, especially active service abroad.

The majority of the surgeons favoured either a Bassini operation (exposure of the sac by splitting up the external oblique tendon, and excision of it after ligature at the neck as high as possible, with approximation of the conjoined tendon to Poupart's ligament), or some modification of this, such as replacing the cord superficial to the external oblique tendon. Several of the surgeons, believing that in young healthy adults with strong muscles it is better to interfere as little as possible with the structures entering into the formation of the canal, simply slit the fibres of the external oblique, ligature the sac high up at its neck, and sew up the tendon of the external oblique, not touching the deeper parts. The results appear to be quite satisfactory.

For *hæmorrhoids*, either crushing, ligature, or excision was the operation performed. There seemed to be no special advantage in any particular procedure.

The operation mostly carried out for *varicose veins* of the leg was excision of the diseased structures, either by removing the whole vein in its continuity, or taking it away in small pieces through several small incisions. This was combined with ligature of the internal saphena at its entry into the femoral, or lower down. The accurate marking out of the veins before operation by carbol-fuchsin or red ink was found to facilitate greatly the ease with which the veins could be removed.

For *varicocele* all the surgeons exposed and excised about 2 inches of the pampiniform plexus, care being taken to remove only about two-thirds of the veins, leaving the remaining third to carry on the blood-supply. The two ligatures were tied together to brace up the remaining structures of the cord. Two points were especially noticed which were essential for the success of the operation: firstly, to ensure absolute asepsis in a part so liable to infection; and secondly, to stop all hæmorrhage, as a large hæmatoma so readily forms in the loose tissue of the scrotum.

In the minds of many of the surgeons the question has arisen whether the great number of operations performed for these four complaints (hernia, varicose veins of the leg, varicocele, and hæmorrhoids) has been justified. In many of the cases the men had suffered little, if any, inconvenience from ailments which often had been present for years, during all of which time they had been performing work at least as laborious as the work which their position in the army entailed. They came for operation simply because they had been told by their medical officer it was the proper thing for them. Great numbers of these men will never go to the front. Is a man with the scar of a recent operation for the radical cure of hernia in as good a condition for performing his work in the army as one with a small swelling in the groin which for years had never caused him the slightest inconvenience? Does a man with a trifling varicocele (the great majority of recruits examined have a slight varicocele) require excision of his pampiniform plexus, and is he really better off if it is done?

Deformities of the feet.—There have been quite a large number of soldiers admitted for bunions, corns, hammer-toe, flat-foot, ingrowing toe-nail, hallux valgus, &c. The usual operation done for hammer-toe was excision of the head of the first phalanx, which was quite satisfactory. A few cases had the toe amputated. For ingrowing toe-nail the nail was removed and proper boots were ordered.

Appendicitis.—A good many men have been admitted for acute appendicitis. All the surgeons are agreed that the patients should be operated on as soon as possible. The incision most often adopted was a vertical one on the outer side of the rectus, but some surgeons have used a transverse incision at the level of the umbilicus with satisfactory result. If the case was accompanied by suppuration no prolonged attempt was made to find the appendix; it was only removed if found quite easily. There have been a few cases of general suppurative peritonitis due to the appendix, and here the practice was to drain with many large drainage-tubes.

Accidents.—All kinds of accidents have been admitted—simple and compound fractures of the limbs and skull, fracture of the spine and of the collar-bone, sprains, burns, bruises, concussion, &c. Of these, compound fractures of the leg have been quite frequent, due in many cases to the kick of a horse. The treatment carried out was thorough disinfection of the wound with iodine or carbolic acid and fixation of the fragments as far as practicable by splints. Generally, this has been sufficient to ensure asepsis. A few cases have been plated, screwed, or otherwise mechanically treated.

Medical cases.—The cases taken into the medical wards have been similar to those which are admitted to the medical wards of a general civil hospital—cases of pneumonia, typhoid fever, bronchitis, gastro-intestinal disorders, &c., and have presented, with a few exceptions, nothing of special interest. Most of the illnesses have been of a mild nature, and there have been few deaths among the patients. Of the few examples of unusual diseases admitted may be mentioned one of mediastinal tumour in a youth of 18 and a case of suspected foot-and-mouth disease. About 30 cases of ptomaine poisoning from one camp were met with. They all were mild, due to the eating of tinned food, and had as symptoms diarrhœa, vomiting, pyrexia, and general malaise. Under simple treatment, such as the administration of a purge, with rest in bed and a milk diet, all made a rapid recovery.

Infectious diseases were not admitted, except at the first, when there was a large outbreak of measles and German measles at several of the camps. A good many men were admitted then to special wards, but now arrangements have been made for any infectious patient to be sent to the sanatorium. A few instances of epidemic cerebro-spinal meningitis have occurred.

Of the *mental cases*, many were men from the front who had developed neurasthenia, psychasthenia, or actual mental disease as the result of the great strain to which they had been submitted. From the camps also several men were taken in for the like complaints. These latter were transferred to the guardians of their parish if they developed suicidal symptoms. The men from the Expeditionary Force who became dangerous were sent to Netley.

There are several special departments in the hospital—an ophthalmological clinic for eye diseases and refractions, a dental department for the treatment of diseases of the teeth, and a nose, throat, and ear department for the treatment of diseases of those organs. In addition there is a neurological clinic for nerve cases, with electrical apparatus for ionisation, high frequency, &c., and Dowsing radiant baths.

These examples of the work of the Second Eastern General Hospital will show that, altogether apart from the treatment of wounded from the front, a very useful purpose has been served by the establishment of these Territorial Hospitals.

UNIVERSITY OF LONDON OFFICERS TRAINING CORPS.—The University of London Officers Training Corps, under the command of Lieutenant-Colonel D. S. Capper, which necessarily contains a large number of men who have embraced the medical calling, will begin its eighth year of training under exceptional conditions, as the colleges of the University are largely depleted of students. In the infantry unit, the largest in the contingent, the training since the outbreak of the war has been mainly of a continuous character, cadets being accommodated in premises near London. As a rule, a few months of training under these conditions have been sufficient to qualify cadets for commissions. The artillery and engineer units of the contingent are also in active training. Their work is especially important at the present time as there are so few facilities for the training of technical officers. The artillery unit has been permitted to keep its guns and equipment for training purposes. In the medical schools of the University a considerable number of students are completing their medical training with a view to taking commissions as soon as qualified. The strength and training of the medical unit of the University Officers Training Corps have therefore not been much affected by the war and the cadets attended camp as usual.

Since the outbreak of war the number of commissions obtained by cadets and ex-cadets of the contingent up to the end of August, 1915, amounts to 1521, and 189 commissions

were obtained before the war, giving a total of 1710. In addition, 245 commissions have been obtained up to the same date, upon the recommendation of the University, by graduates and students who were not cadets or ex-cadets of the University Officers Training Corps. By the end of September the University will have supplied well over 2000 officers to the army through the Officers Training Corps, or by direct recommendation, and many other graduates and students have obtained commissions through other channels. Distinctions obtained by ex-cadets of the University Officers Training Corps include: Military Cross, 6; Médaille Militaire, 1; mentioned in despatches, 14.

Under War Office Regulations membership of the University of London Officers Training Corps is not restricted to members of the University, and other men of suitable education, desirous of qualifying for commissions, are accepted. Candidates for enrolment should apply personally to the Adjutant, at the Headquarters, 46, Russell-square, London, W.C.

WOUNDED ALLIES RELIEF COMMITTEE: HELP FOR HOSPITALS IN FRANCE.—The committee's hospital at the Hôtel de l'Alliance, Dieppe, where between 60 and 70 patients from Zouave and Algerian regiments are constantly in residence, and where, since the hospital's acquisition by the committee, only one death has occurred, is in urgent need of eight fire-extinguishers (of the hand grenade type) and a sewing machine. These would greatly increase the safety and efficiency of the hospital, which has already earned a reputation for its economical working. Anyone who feels inclined to assist in supplying these articles is requested first to write for details as to packing and transit to the secretary of the committee, Sardinia House, Kingsway, W.C., while subscriptions of money should be sent to the honorary treasurer, Mr. T. O. Roberts (Manager), London County and Westminster Bank, 217, Strand, W.C.

COMFORTS AND LUXURIES FOR THE TROOPS.—A central organisation to coördinate the work of the various committees and individuals occupied in supplying comforts and luxuries for the troops is a new departure of the War Office. The scheme will be directed by Colonel Sir Edward Ward. The object is to curtail the making by private persons and societies of articles which are issued officially by the Government, and to restrict appeals for help by private persons for special units. Small consignments often give trouble at the main depôts. Socks and shirts, for example, are Government issues, but not mufflers and mittens, although such articles as these must be made to conform with the actual requirements of the troops.

ABERDEEN SCHOOLS AND THE EFFECTS OF THE WAR.—Dr. George Rose, the medical officer to the Aberdeen School Board, in his annual report on school medical inspection in Aberdeen, shows that although at the beginning of the war there were much discomfort and inconvenience to both teachers and scholars owing to the appropriation of the schools for billeting purposes, the war does not appear to have had any bad effect upon the health and welfare of the school population. In nutrition and cleanliness the condition of the children compared favourably with the results of examination in past years, while improvement was shown in regard to clothing and footgear.

THE KING'S VISIT TO YORKSHIRE.—On the occasion of the King's visit to the munition works in the Yorkshire area on Sept. 27th His Majesty was received at the University of Leeds and afterwards at the Second Northern General Hospital, where he was met by Surgeon-General W. W. Kenny, Deputy Director of Medical Services, Northern Command, and Lieutenant-Colonel H. Littlewood, R.A.M.C. The King also inspected the East Leeds War Hospital.

THE AUSTRALIAN GENERAL HOSPITAL IN ENGLAND.—The Commonwealth are about to double the existing accommodation of the Australian General Hospital. This means the addition of another 1040 beds.

ROYAL PORTSMOUTH HOSPITAL.—At a meeting of the governors held on Sept. 24th it was decided not to insure the hospital against damage by aircraft or bombardment, it being considered that the risk of such attacks was very remote.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At the Second Professional Examination in Anatomy and Physiology held on Sept. 23rd, 24th, and 27th, for which 51 candidates presented themselves, the following 34 candidates were approved:—

Keith Edward Attenborough, St. Mary's Hospital; Edward Jocelyn Bilcliffe, St. George's Hospital and King's College; Walter Alan Flynn, Guy's Hospital; Melik Girgis, B.A. Assiut, Assiut and King's College; Walter Henry Grace, B.Sc., Sydney University and Guy's Hospital; Douglas Vernon Halstead, Guy's Hospital; Frederick John Harvey, Birmingham University; Cecil Edward Eede Herington, St. Bartholomew's Hospital; Cyril Patrick Hines, St. George's Hospital and King's College; Clifford Venning Isard, St. Thomas's Hospital; Thomas Glynn James, University College, Cardiff; Evelyn Hope Johnson, Manchester University; William Anthony Jolliffe, Henry Cyril Conwy Joyce, Abd Elaziz Ebul Khair, and Lloyd Kirwood Ledger, St. Bartholomew's Hospital; James Galway McCann, St. Thomas's Hospital; Christopher Hugh Macklin, Middlesex Hospital; Charles Leslie Mason, St. Mary's Hospital; Alfred Yaphet Massouda, King's College; Guy Meadows, Guy's Hospital; Farid Morcos, St. Mary's Hospital; John William Welsh Newsome, Middlesex Hospital; David Forsyth Panton and Jacobus Cornelius Pauw, London Hospital; Montagu Cecil Polhill, University College; Charles Farrell Rainer, London Hospital; Richard Harold Reece, Cambridge University; Francis William Reitz, Cape Town and Guy's Hospital; George Augustus Shelmerdine Shacklock, Guy's Hospital; Charles Ernest Alan Shepherd, King's College; Basil Campbell Ward Simpson, Guy's Hospital; Nai Synn, St. Bartholomew's Hospital; and Israel Hyman Zortman, B.Sc. Lond., Ph.D., London Hospital.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—The opening meeting of this society will be held on Friday next, Oct. 8th, at the West London Hospital, at 8.30 P.M., when Dr. Leonard Dobson, the new president, will be inducted, and the Keetley Memorial Medal will be presented to the retiring president. A presidential address on Progress in Treatment will be delivered by Dr. Dobson.

POOR-LAW MEDICAL OFFICERS' ASSOCIATION.—A Council meeting was held on Sept. 23rd, Surgeon-General G. J. H. Evatt presiding, when Dr. Major Greenwood, the honorary secretary, reported that the attitude of the War Office towards Poor-law medical officers would be considered by the Emergency War Committee. The Council discussed the case of Mr. C. E. Denning, of Epping, whose suspension by the guardians had been cancelled as the result of an inquiry by the Local Government Board. Since the Board had entirely exonerated Mr. Denning and removed his suspension the guardians had endeavoured to determine Mr. Denning's appointment by giving him a month's notice in accordance with the terms of the contract he had originally signed with the guardians. This had resulted in another appeal to the Local Government Board, and that authority had ruled that the guardians' action only determined the particular contract, but did not affect Mr. Denning's tenure of office as workhouse medical officer. This decision showed that no contract made by Poor-law medical officers with boards of guardians could override the conditions laid down in the Poor-law Orders. A letter was read from Mr. Denning, complaining that the Epping guardians were now endeavouring to put in the new contract, which he was required to sign, conditions that would seriously interfere with his private practice. The Council unanimously decided that the fullest support should be given to Mr. Denning. Dr. Greenwood reported that a Departmental Committee had been appointed by the Local Government Board to revise the existing Poor-law Orders, and that suggestions and criticism had been invited from associations of Poor-law officers. He submitted a memorandum, drawn up with the assistance of Major C. Thackray Parsons, R.A.M.C., on the points to which the Poor-law medical officers should draw the attention of the committee, and this the Council unanimously decided to send to the chairman of the Departmental Committee. A letter was read from Dr. J. K. Willis of Cranleigh, inquiring whether Poor-law medical officers were entitled to extra fees for certificates in the case of mental defectives. He had been required to give such certificates by his board as part of his duties, but had only done so under protest, and the Council were unanimously of opinion that the giving of these certificates was not part of the ordinary duties of Poor-law medical officers, who were entitled to the fee laid down in the Lunacy Acts for lunacy certificates.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Scottish and Welsh National Insurance Commissions.

A RUMOUR has been current in the Lobby of the House of Commons that the Retrenchment Committee has decided to recommend to the Government in the interests of economy that the Scottish and Welsh National Health Insurance Commissions should be merged in the National Health Insurance Commission, with its headquarters in London. It is stated that the recommendation would not extend to the Irish National Insurance Commission. It should be pointed out that the matter has not yet been made the subject of official announcement. Even if the recommendation were made it does not follow that the Government would adopt it.

Medical Men and Motor Spirit Duty.

According to the original scheme of the Budget, it was intended that medical men along with other users of motor spirit should pay the full amount of the increased duty of 3*d*. per gallon. That is not quite certain now. A resolution was passed in Committee of Ways and Means to the effect that the provisions under which the increase was imposed should not operate to increase allowances or rebates to those who had enjoyed them under the present law. The effect of this resolution, if confirmed on report, would have been to have precluded the House from discussing the advisability of further abatements to medical men amongst others. Representations were made to the Chancellor of the Exchequer on the undesirability of shutting the door upon such a discussion. On Wednesday, Sept. 29th, Mr. MCKENNA himself on report moved the rejection of the resolution in question. The result is that the House of Commons leaves its hands free to grant abatements of the new motor spirit duty to medical men if it thinks fit when the Finance Bill comes before it. If the full 3*d*. per gallon were imposed upon them they would be paying an increase of 200 per cent., and, as Sir HENRY CRAIK pointed out, this would be most serious at a time when the profession was giving its services so freely as it is at present. Later on its claims to further consideration will be advanced. Incidentally it was stated in debate that many of the motor-cars from America which it is proposed to tax to the extent of 33⅓ per cent. *ad valorem* are of the kind used largely by medical men.

HOUSE OF COMMONS.

THURSDAY, SEPT. 23rd.

Exercise of Convalescent Soldiers.

Mr. PETO asked the Under Secretary for War whether a recent Army Order applicable to wounded men recovering made it obligatory for men who were passed as fit for light duty to walk morning and afternoon and therefore stopped week-end furlough and all entertainment of the men collectively, and whether he would leave some discretion in the matter to officers commanding.—Mr. TENNANT replied: The honourable gentleman will, I think, recognise the desirability, in the interests of the army and the men themselves, of soldiers who have been discharged from hospital as "fit for light duty" being brought as early as possible up to the standard of "fit for duty." This is the sole object of the instructions referred to in the question. Officers in command of depôts will, I am sure, apply the instructions in a reasonable manner, and I do not think that it can be said that this daily exercise stops all collective entertainment.

Soldiers Discharged from Hospital.

Mr. PETO asked the Financial Secretary to the War Office whether he would consider the advisability of appointing county boards to look after soldiers discharged from hospital, to which a detailed medical report could be made, and who should have power to decide, within limits, the rate of pay and allowance necessary in each case to ensure the men reasonable conditions for a fair chance of complete recovery. —Mr. FORSTER replied: If my honourable friend refers to soldiers discharged from hospital, I do not think the proposal he makes is necessary. On discharge from hospital a soldier, if still requiring medical care, is sent to an auxiliary hospital which is in the nature of a convalescent home. He is there carefully looked after and his full pay is continued. If he is discharged on furlough to proceed to his home he receives a free travelling warrant and an advance of £1. While at home he draws his full pay and also allowances varying from 1*s*. to 2*s*. a day in addition to any separation allowance previously payable.

Asylums as Army Hospitals.

Replying to Mr. KING, Sir J. SIMON (the Home Secretary) wrote: Nine asylums have been entirely vacated and two partially vacated to provide hospital accommodation for wounded soldiers. Between 13,000 and 14,000 lunatic patients thus displaced have been accommodated in the remaining asylums with the result that most of these asylums have at present a larger number of inmates than would be considered advisable by the Board of Control in normal times. The reports of the Commissioners who have visited the asylums in question speak with approval of the efforts made by the visiting committees to minimise the disadvantages of the arrangement, which is only justified by the exceptional circumstances of the present time.

Book Debts of Medical Men.

Sir HILDRED CARLILE asked the Chancellor of the Exchequer whether surveyors of taxes were directed, when making an assessment for income-tax, to add to the proved incomes of the medical profession one-third, or indeed any part, of the value of any book debts which might be standing in their books, and which they might never succeed in recovering; and, if so, on what grounds such additions were allowed to be made.—Mr. MCKENNA wrote in reply: No instructions of the nature suggested have been issued. In the case of medical men, as in other cases, any sum for book debts which has been included for income-tax purposes in the profits of any year is, of course, excluded from the profits of the year in which the debts are paid. Should the debts prove to be irrecoverable they would be allowed as a deduction from the profits of the year in which they were subsequently written off.

The Duty on Patent Medicines.

In the course of the discussion in Committee of Ways and Means on the Budget, Mr. GLYN-JONES referred to the proposal to double the duty on patent and proprietary medicines. The object of the increase was either to raise revenue or to discourage consumption, or to achieve both ends. He would remind the Chancellor of the Exchequer that the committee which had reported on patent and proprietary medicines came to the conclusion "that these remedies are of a widely different character, comprising (*a*) genuine scientific preparations, (*b*) unobjectionable remedies for simple ailments, and (*c*) many secret remedies making grossly exaggerated claims to efficacy, causing injury by leading sick persons to delay in securing medical treatment; containing in disguise large proportions of alcohol; sold for improper purposes; professing to cure disease incurable by medication; or essentially and deliberately fraudulent." It might be said that the tax was intended and should be used to curtail the consumption of these articles. The Chancellor of the Exchequer had said that the yield of the new taxes would come to £520,000, which meant that on the existing estimate, that was the present amount realised, £330,000, the right honourable gentleman was budgeting for a decrease in these medicines of 12½ per cent. He did not think that the right honourable gentleman would argue that it was a proper thing to seek to lessen the consumption of the two first sets of articles referred to by the committee. The right honourable gentleman might argue that he wanted to reach the third class—those medicines which were fraudulent or harmful. Surely if that were so this was an absurd way to deal with the matter. What did it amount to? It amounted to this, that if there were fraudulent or harmful medicines being sold to-day on which the Chancellor of the Exchequer took a stamp of 1½*d*. in the shilling, it was an improper thing and should be stopped, but that if the quack or fraudulent maker was prepared with the help of the Government to go on defrauding or poisoning his victims, he might do that provided that the victim in addition paid in the future an extra tax on the bottle. Really it was absurd to try to protect the ignorant from the third class of proprietary medicines by making them pay an extra 1½*d*. in the shilling, whilst being defrauded and injured. He desired to impress upon the Government that it was a physical impossibility to ask the trade to restamp existing stocks of proprietary medicines before Sept. 29th, the date on which the new duties became payable.

TUESDAY, SEPT. 28TH.

The Duty on Patent Medicines.

Mr. GLYN-JONES asked the Chancellor of the Exchequer whether having regard to practical difficulties of bringing the increased patent medicine duty into operation at once he would postpone the date on which it would take effect.—Mr. MCKENNA replied: The Commissioners of Customs and Excise have by my direction discussed this matter with the representatives of the trade, and have reported to me that in their opinion a good case has been made out for postponing the operation of the new duty. I propose to ask the House to-morrow to agree to its postponement until Oct. 20th.

Irish National Health Insurance Fund.

Mr. HORNER asked the Representative of the Insurance Commissioners what was the approximate amount of the Irish National Health Insurance Fund; and whether any alteration was contemplated, by legislation or otherwise, with the control of the Fund by the Irish Insurance Commissioners; and, if so, what was the nature of the proposed change.—Mr. C. ROBERTS answered: The amount of the Fund in the hands of the Irish Insurance Commissioners and of the National Debt Commissioners on August 31st last was £1,085,550. Legislation would be required for the purposes suggested in the question, and any such proposals would therefore have to be submitted to the House.

Disabled Soldiers.

Replying to Major CHAPPLE, who asked whether steps had been taken to ascertain how many wounded men had been rendered unfit for further war service, Mr. TENNANT (Under Secretary for War) replied: The number of men unfit for further war service of course is known, but my honourable friend will recognise the undesirability of making public statistics on this head.

Chairmen of Medical Service Subcommittees.

Mr. GOLDSTONE asked the Representative of the National Health Insurance Commissioners whether a paid servant of any Local Medical and Panel Committee could act as chairman of a medical service subcommittee; and whether it was also open for the secretary of an Approved Society who was appointed a member of an Insurance Committee by a town or county council to be elected the chairman of a medical service subcommittee.—Mr. C. ROBERTS wrote in reply: The Medical Benefit Regulations provide that the chairman of the Medical Service Subcommittee of an Insurance Committee shall be selected by the members of the subcommittee from those members of the Insurance Committee appointed by the county (or borough) council and by the Commissioners who are neither insured persons, practitioners, nor registered pharmacists. If the honourable Member has in mind any specific case in which it appears that the regulations are not being complied with, and will furnish me with the particulars, I shall be glad to inquire into the matter.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

LEWIS, ERNEST WOOL, L.R.C.P., M.R.C.S., has been reappointed Medical Officer for the Fifth District by the St. Germans (Cornwall) Board of Guardians.

LOGIE, J. W., M.B., C.M. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Rothes District of the county of Elgin.

NETTLE, WILLIAM, M.R.C.S., L.S.A., J.P., has been appointed Acting Deputy Medical and Public Vaccinator for the Sixth District of the Liskeard (Cornwall) Union.

O'KEEFFE, C. E., L.R.C.P. & S. Irel., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Tring District of the county of Herts.

ROBERTS, MONA DEW, M.B., B.S. Lond., has been appointed an Honorary Anæsthetist to the Royal Infirmary, Liverpool.

SIBBALD, T. R. S., M.B., C.M. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Bankfoot District of the county of Perth.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).
When the application of a Belgian medical man would be considered the advertisers are requested to communicate with the Editor.

BELGRAVE HOSPITAL FOR CHILDREN, Clapham-road, S.W.—Resident Medical Officer for six months. Salary at rate of £100 per annum, with board, residence, and washing.

BETHNAL GREEN INFIRMARY, Waterloo House, Waterloo-road, N.E.—Assistant Medical Officer. Salary at rate of £280 per annum, with apartments, board, and washing.

BIRMINGHAM GENERAL DISPENSARY.—Resident Medical Officer, unmarried. Salary £250 per annum, with apartments, fire, light, and attendance.

BRISTOL ROYAL INFIRMARY.—House Physicians and House Surgeons. Salary at rate of £120 per annum, with board, apartments, and laundry. Also Dental House Surgeon for six months. Salary at rate of £120 per annum, with apartments, board, and laundry.

CAMBRIDGESHIRE ASYLUM, Fulbourn, near Cambridge.—Junior Assistant Medical Officer, unmarried. Salary £200 per annum, with board, lodging, washing, and attendance.

CANTERBURY MENTAL HOSPITAL.—Locum Tenent Assistant Medical Officer. Salary £7 7*s.* a week, with board, lodging, washing, and attendance.

CARDIFF, KING EDWARD VII.'S HOSPITAL.—House Surgeon for six months. Salary at rate of £140 per annum, with board, residence, and laundry. Also Student-Dressership for three months. Salary at rate of £26 per annum, with board, residence, and laundry.

DARLINGTON HOSPITAL AND DISPENSARY.—House Surgeon. Salary £160 per annum, with board, residence, and laundry.

GENERAL LYING-IN HOSPITAL, York-road, Lambeth.—Resident Medical Officer for three months. Salary at rate of £100 per annum, with board.

GRANTHAM, BELTON PARK, 3/1st NORTH MIDLAND FIELD AMBULANCE.—Four Medical Officers.

GREAT YARMOUTH HOSPITAL.—House Surgeon, unmarried. Salary £200 per annum, with board, lodging, and washing.

INVERNESS, NORTHERN INFIRMARY.—House Surgeon. Salary £150 per annum, with board, &c.

LABORATORIES OF PATHOLOGY AND PUBLIC HEALTH, 38, New Cavendish-street, W.—Bacteriologist.

LEEDS PUBLIC DISPENSARY.—Female Resident Medical Officer. Salary £130 per annum, with board, residence, and laundry.

LIVERPOOL, DAVID LEWIS NORTHERN HOSPITAL.—Two Female Resident Surgeons for six months. Salary at rate of £100 per annum, with board.

LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W.—Assistant Resident Medical Officer. Salary at rate of £120 per annum, with board, residence, &c. Also Medical Registrar. Salary at rate of 40 guineas per annum.

MANCHESTER, CITY OF.—Female Medical Officer. Salary £350 per annum.

MIDDLESBROUGH, NORTH RIDING INFIRMARY.—Female Resident Surgeon. Salary £120 per annum, with board, apartments, and laundry.

NORFOLK, HOLKHAM PARK, 1ST SOUTH MIDLAND MOUNTED BRIGADE (T.).—Three Medical Officers.

PORTSMOUTH ROYAL HOSPITAL.—House Surgeon for six months. Salary £150 per annum, with board, &c.

PUTNEY HOSPITAL, Putney Common, S.W.—Resident Medical Officer. Salary £150 per annum, with residence, board, and laundry.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—House Surgeon for six months. Salary £100 per annum, with board, residence, and washing.

REETH UNION AND RURAL DISTRICT COUNCIL, Yorkshire.—Medical Officer (Muker District) and Medical Officer of Health (whole District). Salary £45 and £50 respectively.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Male and Female House Physician and House Surgeons for six months. Board, lodging, and washing provided.

ST. MARY, ISLINGTON INFIRMARY, Highgate Hill, N.—Junior Assistant Medical Officer for six months. Salary at rate of £180 per annum, with board, residence, and laundry.

SALFORD ROYAL HOSPITAL.—Junior House Surgeon and Casualty House Surgeon for six months. Salary at rate of £100 per annum each, with a bonus of £5 per month during the war, with board and residence.

SHEFFIELD ROYAL HOSPITAL.—Honorary Physician.

SHEFFIELD ROYAL INFIRMARY.—House Surgeon. Salary £100 per annum, with board and residence.

SOUTHAMPTON, FREE EYE HOSPITAL.—House Surgeon. Salary £100 per annum, with board, lodging, and laundry.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House Physician. Salary £150 per annum, with rooms, board, and washing.

STOKE-ON-TRENT COUNTY BOROUGH.—Resident Assistant Medical Officer at Stanfield Sanatorium. Salary at rate of £350 per annum inclusive, or £250 per annum, with board and residence.

WARWICKSHIRE AND COVENTRY JOINT COMMITTEE FOR TUBERCULOSIS.—Tuberculosis Medical Officer. Salary £500 per annum.

WEST BROMWICH AND DISTRICT HOSPITAL.—Assistant House Surgeon, unmarried. Salary £120 per annum, with residence, board, and laundry.

WEST HAM AND EASTERN GENERAL HOSPITAL.—Resident Medical Officer. Salary £160 per annum. Also House Physicians and House Surgeons. Salary £120 and £100 per annum respectively, with board, residence, and washing.

WHITEHAVEN AND WEST CUMBERLAND INFIRMARY.—Resident House Surgeon. Salary £150 per annum, with board, washing, and attendance.

WIGAN, ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY.—Junior House Surgeon. Salary £150 per annum, with board, apartments, and washing.

WORCESTER GENERAL INFIRMARY.—Resident Medical Officer. Salary £150 per annum, with board, residence, and laundry.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of a vacancy for a Certifying Surgeon under the Factory and Workshop Acts at Laurencekirk, in the county of Kincardine.

Births, Marriages, and Deaths.

BIRTHS.

BURROUGHES.—On Sept. 21st, at Hertford-street, Mayfair, the wife of Captain H. N. Burroughes, R.A.M.C. (T.F.), of a son.

RAWLENCE.—On Sept. 23rd, at Heatherside, Brockenhurst, the wife of Lieutenant H. E. Rawlence, R.A.M.C., of a son.

ROBERTS.—On Sept. 22nd, at De Freville-avenue, Cambridge, the wife of Captain Ffrangcon Roberts, R.A.M.C. (T.), Fellow of Clare College, of a son.

MARRIAGES.

PARRY—DAVID.—On Sept. 21st, at the Parish Church, Llanover, Guy W. Parry, Lieutenant, R.A.M.C., to Anne, only daughter of Mr. and Mrs. David, of Ty Mawr, Llanover.

RAYMENT—WILLOUGHBY.—On Sept. 20th, at St. Luke's Church, Hampstead, Frederick William Rayment, M.B., Ch.B. Edin., to Kathleen Gladys, only daughter of the Rev. J. Willoughby, D.D., Vicar of St. Luke's, Hampstead.

STONEY—FIGGIS.—On Sept. 22nd, at Delgany Church, Co. Wicklow, R. Atkinson Stoney, F.R.C.S. Irel., to Gladys Enid, only daughter of Mr. and Mrs. A. Lenox Figgis, of Gorse Hill, Greystones.

DEATHS.

HUGHES.—Killed in action in Gallipoli on Sept. 15th, Burroughes Maurice Hughes, M.R.C.S., L.R.C.P. Lond., Captain, 1/4th Norfolk Regiment, of Wymondham, Norfolk, aged 43 years.

MOODY.—On Sept. 20th, at the London County Council Asylum, Cane Hill, Coulsdon, Surrey, Sir James M. Moody, Kt., M.R.C.S., L.R.C.P. Edin., L.M., aged 62 years.

PARKER.—Killed in action (Gallipoli Peninsula) early in August, Lieutenant Jeffery Wimperis Parker, R.A.M.C., aged 32 years.

PARSONS.—On Sept. 21st, at the 3rd London General Hospital Wandsworth, Lieutenant Edward Daniell Parsons, M.R.C.S., L.R.C.P. Lond., D.P.H. (R.A.M.C.), aged 37 years.

PAUL.—On Sept. 19th, at the Persian Gulf, Thomas Bond Paul, Lieutenant, I.M.S., aged 25 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

A PERIL OF THE HEDGE AND FIELD.

IN several instances recently young children have met their deaths from eating things picked in the hedge or in the field. A boy of 2 had been in the harvest-field and had found and swallowed a bean unknown to the parent. Respiratory trouble ensued, and the X rays failed to reveal the cause. At the post-mortem examination a horse-bean was found at the base of the bronchial tubes. Another boy of 6 died from belladonna poisoning after eating the berries of the deadly nightshade variety picked in the hedge in mistake for blackberries. An elder brother who also ate some berries recovered. Only last week some fatal cases were reported near London of death from eating fungi, supposed to be mushrooms. It is unfortunate that the inhabitant of the British Isles as a rule knows nothing whatever of the names, habitat, or properties of the common objects in the hedge or field, and what he thinks he knows is mostly wrong. There is perpetual confusion in the public mind between the woody nightshade and the deadly nightshade. The first is a solanum and the latter is *Atropa belladonna*. One variety of solanum has berries, often on the same stalk, resembling haws, and the plant is not infrequently found growing among hawthorn bushes and displaying its red berries of the same size and shape side by side. On squeezing the solanum berry a soft red pulp with 30 or 40 tiny white seeds oozes out, but the haw will have a hard stony centre and solid pulp. There is also the *Solanum nigrum*, which has black berries. The berries are unwholesome, and it may be noted that those of the common potato (a solanum) are also poisonous. The "deadly nightshade" has a fruit like a small black wild cherry and is an entirely different plant. There are other poisonous berries which may be eaten by children in mistake, such as those of the black bryony, sometimes called the wild hop. The black bryony shares with another species the name of bryony, and confusion from time to time arises. This is the *Bryonia dioica*, called "the red-berried bryony." But the former has berries also of a crimson colour. In each case the berries are mildly poisonous. Laburnum seeds which have been often eaten by children are really dangerous, and fatal results have been reported from their consumption. The berries and leaves of the yew-tree are also poisonous, and a case was reported in THE LANCET two years ago where children ate these berries and the issue was fatal. The first accident alluded to in this note, being mechanical, is of a different class from the others, but serves equally to inculcate the advice that children should not eat the common objects of field or hedge unless specifically warned that they can do so with safety.

CARBINE AND CARABIN.

To the Editor of THE LANCET.

SIR,—Can any of your readers explain why a "Carabin" is in popular French derogatorily "a medical student," that is, what is the etymology of the word? The equivalent English description "sawbones" is obvious enough, and, incidentally, is now quite obsolete save in quack and heterodox pamphlets. Has carabin any connexion with "Calabrian," and, if so, in what manner? The origin of "carbine" does not seem to be certain, and "carabin" in French formerly meant a skirmisher. Was this suggestive that a medical student played, as it were, with his studies?

I am, Sir, yours faithfully,

Sept. 23rd, 1915. K. M. E.

HEALTH OF BERMUDA.

THE report on the Bermuda Blue-book for 1914, prepared by the Colonial Secretary, Mr. R. Popham Lobb, C.M.G., shows that the total resident civilian population is estimated at 20,443 persons—viz., 7137 white (3403 males and 3734 females) and 13,306 coloured (6436 males and 6870 females), an increase, as compared with the census figures of April, 1911, of 1449 persons. The birth-rate was 31·99 (20·03 per 1000 white and 38·40 per 1000 coloured), and the death-rate 15·60 per 1000 (11·48 for white and 17·81 for coloured). Deaths from cancer numbered 11 (3 white and 8 coloured), equivalent to a rate per 1000 of 0·42 for white and 0·60 for coloured persons, or 0·53 together. The mortality from tuberculous disease was at the rate of 2·98 and 6·98 per 100 living civilian white and coloured births respectively (4 white and 34 coloured deaths). The mean age at death was 29·0 years for white and 27·0 for coloured. The building of a general hospital, to be known as the King Edward VII. Memorial Hospital, was begun during 1913, and though the work was stopped when war broke out it is hoped that a portion of it may be got ready for use in 1915. Meanwhile there is a cottage hospital near the city of Hamilton which is supported by voluntary contributions, and hospitals are also maintained in connexion with the Imperial naval and military establishments. An asylum for the care and treatment of the insane was first established in the colony in 1846. The medical officer of health is the medical superintendent of the institution, and there is a competent staff of attendants. Ten patients (7 males and 3 females) were admitted into the asylum in 1914; 4 were discharged and 3 died, and 73 patients (35 males and 38 females) remained at the end of the year.

"MARVELS OF SCIENCE."

THE head of the Salpétrière Laboratory at Paris read recently a paper before the Academy of Sciences on his own experiences with the wounded, and the *Standard* contains an interesting résumé of the paper which was published in its issue of Sept. 18th. The following is an extract: "The foreign bodies thus discovered amongst our wounded were of the most heterogeneous kinds—two pieces of bullets and two pieces of knives, one copper-lined button from the strap of a rifle, a piece of a trouser buckle, seven pieces of lead, and a lot of other unexpected objects, such as a syringe needle and a battered five-franc piece and two silver shreds. The five-franc piece, carried in by a bullet, had been in the man's stomach ever since the battle of the Marne. He was only operated upon last June, and therefore had had the coin inside him for more than nine months, but nevertheless he is in fine health now. I was lucky enough last week to locate a fragment of shrapnel in the right auricle of the heart, from which it was extracted, and the patient is in as satisfactory a state as possible."

CONFUSED EXPRESSION.

To the Editor of THE LANCET.

SIR,—A woman who was applying to her society for maternity benefit wrote: "I have lost my form. I am in bed with a baby girl. Please send me another."

I am, Sir, yours faithfully,

P. G.

THE ORIGIN OF THE PERISCOPE.

J. W. W.—The origin of the periscope is now under discussion and the following extract from the writings of the well-known inventor of "Pepper's Ghost," gives the credit to the clerical profession. Pepper wrote soon after the Crimean War:—"During the siege of Sebastopol numbers of our best artillerymen were continually picked off by the enemy's rifles as well as by cannon shot, and in order to put a stop to the foolhardiness and incautiousness of the men, a very ingenious contrivance was invented by the Rev. Wm. Taylor, the coadjutor of Mr. Denison in constructing the first 'Big Ben' bell. It was called the reflecting spy-glass, and by its simple construction rendered the exposure of the sailors and soldiers, who would look over the parapet or other parts of the works to observe the effect of their shot, perfectly unnecessary; whilst another form was constructed for the purpose of allowing the gunner to 'lay' or aim his gun in safety. The instruments were shown to Lord Panmure, who was so convinced of the importance of the invention, that he immediately commissioned the Rev. Wm. Taylor to have a number of these telescopes constructed; and if the siege had not terminated just at the time the invention was to have been used, no doubt a great saving of the valuable lives of the skilled artillerymen would have been effected in the allied armies. The principle of the reflecting spy-glass may be comprehended by reference to the next cut." (The cut is described in the following words: "A picture of enemy's battery is supposed to be on the mirror A, whence it is reflected to B, and from that to the artilleryman at C.") Lord Panmure was the Secretary at War under Lord Palmerston's Government. The Rev. William Taylor's biography is not easily accessible.

THE VITALITÉ SOCK.

WE have seen specimens of this sock which have been provided with an additional layer of loofah fibre, affording more air space and resiliency. This fibre is thoroughly porous and elastic, and undoubtedly gives great comfort when placed over the sole of the boot. It is suggested that the use of these socks would help materially against the onset of frost-bite, the fibre protecting against both cold and damp. Moreover, its elasticity makes the tread comfortable under trying conditions. Already favourable reports in these respects have been received from our troops at the front. The specimens were sent to us by the Vitalité Sock Co., Ltd., of Plevna-road, St. Ann's-road, South Tottenham, London, N.

THE DEATH-RATES OF LONDON AND BERLIN.

W. T. propounds some questions that cannot be exactly answered. It cannot be definitely asserted that the death-rate of Berlin for the first 12 months of the war will, in the annual returns, prove to be much greater than that of London, but taking a glance at the figures for two weeks only (the German figures are taken from the Amsterdam weekly return), it appears that the annual death-rate per 1000 living for the week ended August 14th, 1915, was for Berlin 19·7 and for the following week 22·8. As some sort of comparison, for London on Sept. 4th it was 12·6 and in the following week 14·0. If a high weekly death-rate for Berlin and a low one for London are maintained, it is obvious that in the annual returns there will be recorded a marked preponderance of deaths in Berlin. With a population 42 per cent. that of London, there were, for instance, half as many again as in London deaths from diphtheria and croup in a fortnight.

THE LATE MR. EDMUND OWEN.

To the Editor of THE LANCET.

SIR,—Mr. Edmund Owen was once conducting a clinical class in the wards of St. Mary's Hospital, and from a student who rarely gave satisfaction, and who conceals his name, he got a good and pertinent answer. Something in Mr. Owen's face led the student to say, "You seem surprised, sir," for one was not afraid of talking to him as if he was a fellow man. "So was Balaam," said Owen.

I am, Sir, yours faithfully,

Sept. 9th, 1915. VERAX.

H.—An analysis of egg-powder was published in our issue of March 16th, 1907. The process preserves the egg quite satisfactorily and consists in spraying raw eggs into a current of warm air. The powder being dried at a low temperature serves the purposes of eggs in many ways, as, for example, in making an omelette or in making cakes. The albumin is not coagulated.

G. W.—Lice on soldiers. Unguemol was noticed in THE LANCET of June 5th, p. 1188. It will answer the purpose our correspondent mentions.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY, West London Hospital, Hammersmith-road, W.

FRIDAY.—8.30 P.M., Presidential Address:—Dr. L. Dobson: Progress in Treatment.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye.

TUESDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Banks Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Banks Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.

THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Banks Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Banks Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.

THURSDAY.—5.15 P.M., Clinical Lecture.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.

TUESDAY.—6 P.M., Dr. W. Griffith: The Classification and Diagnosis of Diseases of the Skin.

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: The Skin in Health and Disease.

For further particulars of the above Lectures, &c., see Advertisement Pages.

The following magazines, journals, &c., have been received:—Journal d'Urologie, British Journal of Dermatology, Medical Journal of South Africa, American Journal of Roentgenology, Archives of Internal Medicine, Journal of Obstetrics, Man, New Zealand Medical Journal, Saint Paul Medical Journal, Tropical Diseases Bulletin, Parasitology.

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(Taken daily at 9.30 a.m. by Steward's Instruments.)

THE LANCET Office, Sept. 29th, 1915.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Sept. 23	29·936	S.	0·02	101	72	57	60	63	Cloudy
,, 24	29·724	S.W.	0·23	113	72	61	60	62	Cloudy
,, 25	29·570	S.W.	...	99	66	57	56	58	Cloudy
,, 26	29·500	S.W.	...	107	66	51	52	56	Cloudy
,, 27	29·684	W.	...	77	59	51	53	55	Cloudy
,, 28	29·710	S.	1·70	87	57	44	44	46	Fine
,, 29	29·454	N.	...	87	45	42	44	44	Raining

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